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EARLY RAILWAY HISTORY IN FURNESS

by

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WITH FOUR MAPS

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INTRODUCTORY

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PREPARATION of this paper was commenced early in 1946, but was suspended when publication was announced of "The Furness Railway: Its Rise and Development" by W. McGowan Gradon, B.A. It having been suggested to us however, that the historical aspect of railway activity in Furness ought to be dealt with in greater detail then was practicable in Mr.Gradon's more general treatise, we completed the work in time for it to be communicated to the Society at Kendal on 10th April, 1948. A revision, to include a little further information obtained since then, was made before the paper was sent to press.

Many authorities have been consulted and wherever possible contemporary sources are quoted. We have also obtained much help from the material left by the late Mr. W. B. Kendall (see CW2, XLVI, 77), which includes documents relating to the Furness Railway—original copies of Directors' Reports, and Time-tables; tracings of original maps and plans; and some MS. notes. In some details Mr. Kendall's information differs from that already published. He received his training as a Civil Engineer with the Furness Railway Company, being in its service from 1867 to 1883, during which period he is known to have had access to all the Company's papers. His account is almost contemporary therefore, and we feel that his statements have considerable weight. Many of his notes are technical and unsuitable for inclusion here, but by the kindness of Mr. Harold Kendall his uncle's papers are deposited on permanent loan at Barrow-in-Furness Public Library.

For advice and assistance received we should like to express our warmest thanks to:— The Editor and the

Rev. J. C. Dickinson; Mr. F. Barnes, B.A., F.L.A., Borough Librarian of Barrow-in-Furness, his Chief Assistant Mr. J. F. Shields, and Mrs. H. Wilson (née Fleming), formerly Assistant-in-Charge, Reference Dept., Barrow Public Library; Mr. George Dow, Publicity and Public Relations Officer, and Mr. A. Higginson, District Commercial Supt., London Midland Region, British Railways; Mr. G. M. Bland, F.S.A., City Librarian of Lancaster; Messrs. F. G. Wilson, Editor of the "North Western Evening Mail", and J. G. Lighburn, Editor of the "Westmorland Gazette"; and Mr. J. D. Greally.

J. Melville.
J. L. Hobbs.

EARLY RAILWAY HISTORY IN FURNESS

DURING the first quarter of the 19th century the iron-ore export trade at Barrow grew enormously, and it is said that " strings " of 20 to 30 horse-drawn carts, laden with ore, were constantly entering the village. The Mine Proprietors were, therefore, considering the possibility of an improved method of transport to the shipping, as early as 1825. Considerable interest was taken in certain experiments and trials made on colliery tramways near Newcastle, in January of that year,[1] and reported upon by John U. Rastrick of Stourbridge (Report to the Committee of the Birmingham and Liverpool Rail Road Co., 12th February, 1825). It was thought that some form of horse rail or " tram " way might be utilised in Furness, but the suggestion was dropped.

Ten years later, propositions for railways were being generally discussed throughout England, and the next move affecting Furness originated at Carlisle, in May, 1836, when it was decided to promote the Maryport and Carlisle Railway. An extension through Furness to Lancaster was contemplated, to be called the " Caledonian, West Cumberland and Furness Railway," or the " Grand Caledonian Junction Railway." Sir H. Le Fleming Senhouse was the moving spirit behind the plan, and a committee was formed at Whitehaven, which requested George Stephenson to report on the scheme, on 1st September, 1836. At that time he was too busy to

[1] See also S. Smiles, *Life of George Stephenson* (ed. 4, 1857), 210-11, 225-6 Randall Davies, *The Railway Centenary: A Retrospect.* (1925), 29-30.

undertake the matter, an unfortunate circumstance which perhaps altered entirely local railway history.

On 6th June, 1837, the Whitehaven, Workington and Maryport Railway Committee (one link of the Grand Caledonian scheme) asked George Stephenson to make an Ocular Survey of two routes between Lancaster and Penrith. This invitation was accepted and he commenced a survey from Lancaster on 1st August. Travelling round Morecambe Bay to Humphrey Head, he crossed Ulverston Sands, examined the Furness Peninsula and Lakes Coniston and Windermere, crossed Duddon Sands, proceeding round Black Combe and up the coast to Whitehaven. He had already seen Mr. Hall's survey between Whitehaven and Maryport, and approved the proposed line, while the Act for a Maryport and Carlisle Railway had already been obtained.[2] Stephenson then returned from Carlisle, over Shap Fell, and by Kirkby Lonsdale to Lancaster. His report, dated from Alton Grange near Ashby-de-la-Zouche, on 16th August, was quickly drawn up. It strongly recommended the coast route — Lancaster to Poulton, across the sands to Humphrey Head on a segment of a circle of 5 miles radius, thence to Chapel Island, through Lindal Moor by tunnel to Kirkby Ireleth[3] crossing the Duddon from Dunnerholme and so along the coast to join the proposed line to Maryport at Whitehaven, thus giving a level line all the way to Scotland.

The Shap route, although having an advantage of 22½ miles in distance, was not recommended. Between Penrith and Sedbergh a railway would be very expensive to make and a tunnel would be required beyond Shap. But the chief objection was the snow in the winter and

[2] 1 Vict. C.101. See J. Simmons, *The Maryport and Carlisle Railway*, 1947, 5-6; S. Smiles, op. cit., 386-7.

[3] Ireleth near Askam, then usually referred to as "Kirkby Ireleth," and thus often confused with the parish of the same name three miles to the north.

the time it remained on the ground, while ice on the rails would be an insurmountable difficulty, particularly as the inclines must be steep. "The snow posts erected on Shap ridge to point out to travellers the course of the road when covered with snow are a sufficient indication of the severity of the winters. A line across these hills would be interrupted for weeks together." The coast route, owing to sea breezes was free from this objection, and he had not the slightest doubt of the practicability of carrying the line across Morecambe Bay.

As an appendix, Stephenson gave his observations[4] on Morecambe Bay. He was convinced of the fertility of the soil when preserved from the tide, and would pile entirely across the Bay, filling in a bank in layers a foot high at a time. During the execution of the work, the Bay would be converted into a lake, and in a very short time would fill up to high water mark with deposits from the rivers and the tide. The cost ought to be equally shared between the Railway and the proprietors of the Bay, who would attain great advantage from the land reclamation.

The proposal to reclaim land was not new in itself, for a scheme was projected at the end of the 18th century when it was proposed to reclaim areas as follows:—

Lancaster Sands	..	32,510	acres
Ulverston Sands	..	1,600	,,
Duddon Sands	..	4,600	,,
Total	..	38,710	acres at an estimated cost of £200,000.

Wilkinson, the Iron Master, promised to find £50,000 if the remainder was taken up, but there was opposition as to fisheries which would have to be purchased, while

[4] Quoted in the *Westmorland Gazette*, 7th October, 1837.

certain Lords of the Manors wished to claim all their foreshores without contributing towards the reclamation fund, and the scheme fell through.

("A Descriptive Tour & Guide to the Lakes . . etc." John Housman, 2nd Ed. 1802, 215-221; also quoted in "General View of the Agriculture . . . of Lancaster . . . John Holt, 1795, 88 *et seq.*).

George Stephenson's suggestions were accepted by a meeting held at Whitehaven ("Cumberland Pacquet"; and "Westmorland Gazette"; 26th August and 9th September, 1837) and warmly welcomed in Furness. The "numerous and influential" attendance at a gathering of local gentry and business men held at the "Sun" Inn, Ulverston, considered that the formation of a railway over Morecambe Bay and Duddon Sands was practicable, and highly approved in principle the plan of the Grand Caledonian Railway, while at a public meeting of the inhabitants of Ulverston and neighbourhood held at Ulverston National Schools on 20th December it was decided to support the petition in favour of the Coast Route, received from the Whitehaven Committee, and to request the Earl of Burlington to present it and use his influence to ensure its success. A committee was formed as follows: William Gale, Esq., the Rev. W. J. T. Dodgson, Messrs. Kennedy, P. Hartley, T. Gibson, G. Hartley, F. Yarker, W. Satterthwaite, Denney, F. Town, Soulby, Jopling, Daniel Crosthwaite, Salthouse, Sawrey, Postlethwaite (of Broughton), James Stockdale, Roper (of Newland), Roger Postlethwaite, and James Watson, who were to solicit subscriptions to defray the cost of the survey etc., and to provide a deputation to attend a meeting at Whitehaven. ("Lancaster Gazette," 23rd December, 1837).

Elsewhere however, the report met with opposition, the inland towns naturally desiring a line to Scotland

which should serve their interests. This was made clear at a meeting held at the "New Crown" Inn, Penrith on 7th November ("Westmorland Gazette," 11th November) and at another held at Appleby shortly after. During the autumn the 'Westmorland Gazette" conducted a most interesting correspondence, but while "A True Friend" (issue of 11th November) and "An Inhabitant of Low Furness, Walney" (25th November) urged the superior merits of the coast route, other correspondents favoured a line through Westmorland and stressed the importance of including Kendal upon it. (Letters signed "A Well-wisher to my Country," 16th September; "John Bell," 30th September; "G", 14th October and 18th November). At this time the townsfolk of Kendal seem to have been surprisingly indifferent to the railway controversy but more attention was aroused by the publication of a pamphlet by Cornelius Nicholson (Secretary to the Kendal Railway Committee): "The London and Glasgow Railway through Westmorland and Cumberland: The Interests of Kendal Considered" (Hudson & Nicholson, Kendal, 2d.), extracts from which were printed in the "Westmorland Gazette" on 9th December, 1837.

The Preston to Lancaster line was set out in January, 1838, and there seems to have been some advocacy of a continuance over Shap, while Kendal people were agitating for the line to run up the Kent Valley, instead of by the Lune. However, the "Cumberland Pacquet" (March, 1838) stated that Capt. Beasley, and Mr. Haig had reported favourably on the proposed Morecambe Bay and Duddon embankments and advised that the Grand Caledonian Junction Railway should be proceeded with. The Whitehaven Provisional Committee was reorganised and subscriptions invited ("Whitehaven Herald", 12th Apl., 1838). A few weeks earlier (in February)

this Committee had instructed John Hague, an Engineer who had reclaimed parts of the Lincolnshire foreshore, to survey and determine the route of the railway across Morecambe Bay. He finished this work in September, and from his office, at 36, Cable St., Wellclose Square, London, reported to Sir H. Le F. Senhouse and the Gentlemen forming the Provisional Committee of the Caledonian, West Cumberland and Furness Railway.[5]

The report was revolutionary. Fired by his Lincolnshire experiences, Hague had dismissed Stephenson's suggested line and substituted one of his own. This was by an embankment from Poulton-le-Sands to Leonard Point, 10 miles 51 chains in length, straight across Furness to Roanhead Crag, across the Duddon to Hodbarrow by another embankment 1 mile 65 chains long, thence by the coast, as previously suggested, provision being made for the rivers by locks and floodgates. The embankments would carry a double line of railway, and work could be completed in 3½ years. It was calculated that 46,300 acres of land could be reclaimed in Morecambe Bay and 5,700 acres in the Duddon Estuary, which, at £23 per acre, would provide £1,196,000 towards the cost of the railway.

The Whitehaven Committee, impressed with Hague's figures, now made a tragic mistake and accepted the plan in preference to the much more practical suggestions of George Stephenson. John Urpeth Rastrick was appointed as Consulting Engineer, John M. Rastrick was instructed to make a detailed survey and a Bill was deposited in November, 1838, at which stage over £1,000 had been expended already:—

[5] The original title of the Grand Caledonian Junction Railway Scheme as projected at Whitehaven. For some further account of these matters see W. Mc. G. Gradon, *The Furness Railway: its Rise and Development*, 1946. Chap. iii.

Early Railway Schemes Across Morecambe Bay and Furness.

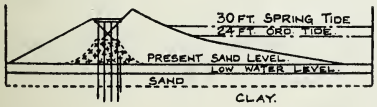
George Stephenson's Scheme 1837 ———

John Hague's Scheme 1838 - - - -

John Abel Smith's Scheme 1840 ••••••••

0 1 2 3 4 5 Miles.

Ravenglass
Kirkby
Ulverston
Lindal Moor.
Hodbarrow Point.
Dalton.
Chapel Island.
Humphrey Head.
Irish Sea.
Barrow.
Leonard Point.
Rampside.
Roa Island.
Piel Pier.
Morecambe Bay.
Poulton.
Lancaster.
Steamer to Fleetwood.
Fleetwood.



Section of Proposed Embankment Across Morecambe Bay. John Hague 1838.

0 10 20 30 40 Feet.

John Hague for preliminary inspection	£30
,, ,, for final survey, experiments and report ..	£530
Capt. Beazley for assistance	£50
J. M. Rastrick for survey and report ..	£400
	£1010

Three competing schemes for railway communication to Scotland were before Parliament during the 1839 Session, dealing with the route from Lancaster to Carlisle as follows:—

1. THE COAST ROUTE. "Caledonian, West Cumberland and Furness Railway" crossing Morecambe Bay, the Duddon Estuary and proceeding by Whitehaven and Maryport to Carlisle.
2. THE KENDAL ROUTE. Passing up Long Sleddale, tunnelling to Haweswater and then by Penrith to Carlisle.
3. THE LUNE ROUTE. Following the Lune Valley (with a tunnel under Orton Scar), Tebay, Crosby Ravensworth, Newby, Melkinthorpe, Crofton, Penrith and Carlisle.

On 14th August, 1839, it was ordered that a Commission consider and report on the merits of the routes.[6] The Report was received by the following May and was ordered to be printed on 19th May, 1840.[7] Briefly, its conclusions were:—

1. That Mr. Hague, the Engineer, proposed to drive four rows of piles across the sands, down into the clay, with 21 ft. spans; to be completed in 2 years. Stones were then to be dropped through holes in the floor of the viaduct until an embankment was formed with an

[6] The two Commissioners, appointed in November, 1839, were Lt. Col. Sir Frederic Smith, and Peter Barlow, Professor of Mathematics, Royal Military Academy, Woolwich.

[7] *Parliamentary Papers*, 1840, XLV, 336-386.

average height of 20 feet and top width of 18 feet. The tide and rivers were expected to deposit sand and silt, and so assist the work, providing 6,149,379 tons of the 10,453,785 tons of material required, and the work should be completed in a further 18 months.

The Commissioners said "The formation of such an embankment may justly be termed a project of gigantic character, and will, if executed, reflect much credit on the Engineer," but they went on to state that they had no satisfactory evidence that the assistance of the sea was likely to be obtained to the extent reckoned upon and Hague's *revised* estimate[8] for embankments, of £395,453 1s. 4d., plus £71,758 0s. 7d. for river channels, a total of £467,210 1s. 11d. was too low. Only ⅓d. per cubic yard had been allowed for excavating rivers, and 2d. per cubic yard for forming embankments, but the Commissioners considered nothing less than 3½d. per cubic yard should be allowed. The price for stone for the embankment was too low and the quantity required under-estimated, while no allowance had been included for loss from storms, scour of tides and other contingencies, for which it would be prudent to add 10%. Thus, even if Mr. Hague was correct in thinking the embankments would be water-tight without puddling, the estimated cost should not be less than £543,373 2s. 11½d. (The extreme precision of the various calculations is worthy of admiration).

It was noted, but not commented upon, that the river channels were to be altered:

The Kent and Keer were to be brought down on the east side of the Bay to Poulton.

[8] Gradon, op. cit., quotes (page 12) Hague's original estimate. These matters were reviewed in 1883 by Hyde Clark in his paper *A Comparison of Morecambe Bay, Barrow-in-Furness, North Lancashire, West Cumberland, etc., in* 1836 *and* 1883. (Report of the 53rd Meeting of the British Association at Southport. Section G, Mechanical Science, Paper 1).

The Leven and Crake by the Furness shore with an extensive basin at Ulverston Canal Foot.

The Duddon was to flow in a new channel along the Cumberland shore, and

Kirkby Pool similarly by the Lancashire shore.

Mr. Hague had only dealt with Morecambe Bay and the Duddon, but the remainder of the line from Maryport to Lancaster was considered satisfactory, the greater part being level, with the gradients easy and in comparatively short lengths. Mr. Rastrick had been over the ground and his staff had levelled possible routes. In Low Furness, the line passed Millwood, to the east of Furness Abbey, midway between Old Holebeck and Stank and thence to the embankment at Leonard Scar.

2. The Kendal Route was reported upon to the Commissioners on 2nd May, 1840, by Mr. Job Bintley, a Civil Engineer of Kendal. The only work of magnitude was the tunnel (2 miles 20 chains long) between Long Sleddale and Haweswater, which was estimated to cost £50,000 per mile and to take 5 years to construct, but the Commissioners pointed out that the highest point over the tunnel would be 1,180 feet above the railway, making the shafts deep and costly, for which reason they thought the estimated cost very inadequate.

3. The Lune Route, for which George Larmer was the Engineer, went via Kirkby Lonsdale and also had a tunnel, through Orton Scar, 1 mile 30 chains in length, 350 feet beneath the surface at the summit.

It was noted that the ruling gradient on both the inland lines was 1 in 140. 12 coaches ran daily between Carlisle and Lancaster.

In comparing the merits of the three routes, the Commissioners had regard to:—

(*a*) The respective distances.

(*b*) The Locomotive power required to overcome the gradients reduced to horizontal distances.

(*c*) The cost per passenger at 2d. per mile, adding 4d. to the inland routes to compensate for the extra gradients.

(*d*) The estimated time occupied by the journey.

(*e*) The present passenger (mail and stage) traffic per annum.

Thus:—

	a.		*b.*		*c.*		*d.*		*e.*
	m.	ch.	m.	ch.	s.	d.	h.	m.	
Coast route ..	94	45	98	34	15	9	4	22	8,040
Kendal route ..	67	16	75	9	10	11	3	20	21528 passengers per annum.[9]
Lune route ..	68	48	78	1	11	7	3	28	

The Coast route was too far round and too costly, and there was no doubt the inland routes were preferable, though the Commission was evidently frightened at the probable cost of the Gatescarth tunnel; the Lune route was therefore recommended, though it was suggested that some amalgamation of schemes 2 and 3 was desirable, if practicable, to provide railway accommodation for the important town of Kendal and yet avoid Gatescarth.

Naturally, the advocates of the Lune Route were disappointed that the Commissioners had recommended the inclusion of Kendal to the exclusion of Kirkby Lonsdale. Barrow-in-Furness Public Library lists a 16-paged pamphlet, "Thoughts on the subject of the proposed Caledonian Railway by the Valley of the Lune or by Kendal: With Observations on a pamphlet published on behalf of the Kendal Railway Committee, by their secretary, Mr. C. Nicholson. By Richard Atkinson; Kirkby Lonsdale: Printed by Arthur Foster, 1842.",

[9] See also J. A. R Pimlott: *The Englishman's Holiday: a Social History*, 76. "The Parliamentary Committee on Railway Communication between London and Scotland estimated in 1841 that 9,282 passengers per annum could be expected for the whole journey from London to Edinburgh if of the alternative routes the coast line were chosen, and 14,199 if the inland line were chosen."

wherein the author demonstrated — to his own satisfaction, at least — that most of the advantages lay with the Lune plan, nearly all the disadvantages lay with the Kendal route, the Commissioners had to make their report on information much of which was imperfect and unsatisfactory, and Mr. Nicholson in his pamphlet has been guilty of many mis-statements. Although the pamphlet failed to influence the final decision, it is well worth reading.

The suggestion of including Kendal while avoiding Gatescarth was afterwards adopted when the Act for the present railway between Lancaster and Carlisle was obtained, but, although Stephenson's views of a line over Shap Fell were proved too pessimistic, it has been conjectured that the cost of hauling heavy traffic over the Fell would have made the Kendal plan the more economical in the end. (L.M.S. Railway Magazine, Vol. 1, No. 3, March, 1924; 172c-173c).

But the blunder of the Whitehaven Committee was apparent. Had they adhered to George Stephenson's route, his moderate proposals, coupled with the prestige of his name, might have induced the Commission to consider the Coast route more favourably. As it was, the plan for a level main line to Scotland, via Furness, had to be abandoned.

Another scheme which had been contemplated in 1838, though it does not seem to have been proceeded with, probably because Hague's plan was adopted in Cumberland, was one by the Preston and Wyre Railway, which was interested in the new harbour and town of Fleetwood. The proposal was to run a service of steamers across to Rampside and make an economical railway to Ireleth, where it would join Stephenson's line. Steamers were already plying to Bardsea for Ulverston(e), but the landing was only available at high tides, whereas a good

landing at any state of the tide might be made at Piel Harbour. Although nothing resulted at the time,[10] it was probably the belief that a railway in Furness would be constructed sooner or later, which caused John Abel Smith, a wealthy, influential and astute London banker, to purchase Roa Island in 1840.[11] In session 1840-41, he promoted a Bill to form a Harbour Company with wide powers, amounting almost to ownership of the navigable waters for miles around, with permission to charge all shipping within the limits prescribed. The Bill was brought forward, but as it interfered with the ancient rights of Piel Harbour to be regarded as a "Harbour of Refuge," it met with opposition and was withdrawn in its early stages. (Report . . . Made for His Grace, the Duke of Buccleuch, The Rt. Hon. the Earl of Lonsdale and The Rt. Hon. the Earl of Burlington by James Walker, Civil Engineer, September, 1842).

After waiting two years without any practical move being made by railway interests, he then sought Parliamentary Powers, at his own expense, to build a pier on the island, with a pier head in deep water at low tide, and to construct an embankment to "connect Roa Island with the neighbouring island of Great Britain . . .", as he put it, on which a short line of railway would be laid to Rampside. He obtained his Act on 27th June, 1843,[12] but his subsequent activities can be dealt with better at a later stage, though mention here of his intention is necessary for strict chronology.

The idea of reclaiming the sands of Morecambe Bay and the Duddon was not abandoned locally when Hague's

[10] Such a service, worked by the Preston and Wyre Railway Company's s.s. "Ayreshire Lassie" first commenced in September, 1846. (John Porter: *History of the Fylde of Lancashire*, 1876, 265).

[11] From the Trustees of the Rampside Hall Estate, for £500, or about £100 per acre. (Richardson: *Barrow-in-Furness — Its History and Development*, 1881, 25).

[12] For particulars of various Acts of Parliament mentioned, see Appendix.

scheme perished. In 1841, the Earl of Burlington (afterwards the Duke of Devonshire) requested Mr. James Walker, (the Civil Engineer who had been engaged by the Government in 1837 to report on the Fleetwood projects) to examine the Duddon Estuary, and various railway plans, which he did in company with Mr. Jopling, the Earl's Agent, in October of that year. On their return, he intimated that owing to the shifting course of the Duddon, the boundaries between Lord Lonsdale's properties in Millom and Lord Burlington's in Kirkby were undefined, and if the former considered his rights prejudiced, he might oppose any scheme. Further, the Duke of Buccleuch's rights as Lord of the Manor might be affected and, in any case, as owner of the Furness Ore Mines, he was interested in possible roads and railways. Walker therefore thought that a report which did not embrace the interests of all three noblemen might be subject to a charge of partiality and, after representations had been made, it was agreed that they employ him jointly.

A Mr. Wright prepared surveys and when his work was nearly completed, Walker went over the district again, in July, 1842, before preparing his report, which was submitted in September. It is a masterly and voluminous document (Mr. Kendall's condensation for his own information covers 14 pages of MS.), which must be summarized briefly.

After reviewing previous abortive Reclamation and Railway plans, Walker considered those possibilities based on Wright's survey, for embanking the Duddon, of which he thought the least objectionable plan was to straighten the channel and keep it near the middle of the estuary by means of embankments, dispensing with sluices, but including a Ford, Ferry or Bridge. Kirkby Pool and other small streams were to be provided with

sluices and tidal doors. 4,000 acres would be reclaimed, at an estimated cost of £50,000. Such an embankment, however, was not in a suitable line for a railway from the Slate Quarries, and if both Noble Lords did not consider the speculation a good one, then the embankment could be kept further away from the middle of the estuary when it might be suitable for the Earl of Burlington's railway from Kirkby Slate Quarries. In that case, the direction might be a straight line from Dunnerholme to Foxfield Hall, the length being 3½ miles, to cost £22,000 and reclaim 1,200 acres. For £1,000 per mile a good tramway could be laid on this embankment.

An embankment south of Dunnerholme was not recommended. Between Barrow and Rampside an enclosure of about 400 acres might be made at an expense of about £7,000 and if the line was taken out as far as Headin Haw, 550 acres area on Salthouse Sands might be reclaimed without great additional expense.

Barrow was considered to be the best shipping place for both slates and ore, with great advantages over Kirkby Pool Foot or Ulverston Canal Foot, and while the time might come when Roa Island and Piel Harbour would offer inducements to go there, that was not so at present.

Reclamation in Morecambe Bay, on the Leven above Park Head, which would improve the approach to both Ulverston Canal and Greenodd, a small but thriving shipping place, was considered and an embankment between Ravenborough Point and Cowpern Point — 2 miles — would reclaim nearly 700 acres for Lord Burlington.

While Wright was surveying for James Walker, Job Bintley, whose plan for a railway through Kendal has been mentioned, was busy in Furness surveying (for the lessees of the Mines) alternative lines of horse railways

between Lindal Moor Pits and Barrow. Walker's report gave some attention to these:—

"The two lines of Railway suggested by Mr. Bintley both terminate at Barrow and join at Dalton, the one passing by Furness Abbey and Newbarns and the other by Sowerby Wood. Either would be an immense improvement upon the present mode of conveyance, which is by one-horse carts upon very hilly roads that are cut up by it in the winter to the cost of the Parish of Dalton, which is bound to keep the roads in repair.

As with the slates, so with the iron-ore, of which, notwithstanding the expensive and primitive mode of conveyance, about 40,000 tons are shipped annually to Barrow: but the excellent quality and richness of the Ulverstone ores are well known and appreciated. A tramway would have the effect of cheapening the conveyance and increasing the sales and it is to be wondered at that one should not have been made ere this. It would carry down the other produce of the district and bring up coals and other supplies of consumption; so like a good turnpike road, it would benefit all who have property within its influence, and therefore especially the Duke of Buccleuch and Lord Burlington and their tenants.

Mr. Bintley has laid out two lines for horse-power, and I agree, considering the extent of the trade, the inclinations, the necessary quick turns and the great load being in the descending direction towards Barrow, this is preferable to a locomotive engine line.

The Sowerby line is 8 miles 27 chains long. The Abbey line is 6 miles 71 chains: the difference one mile and a half nearly."

After discussing the gradients and the advantage to be gained if the ore line could be conveniently joined to that for the slates, and estimating the cost of either route as about £32,000, the report deals with the latter, which

would cost about £1,500 per mile for six miles from Kirkby Quarries to Sandscale, via the shore at the back of Dunnerholme and Sandscale Warren. At Sandscale it could join the ore line, via Sowerby and this route was recommended.

No action was taken on the reclamation proposals, but the Duke of Buccleuch and the Earl of Burlington asked James Walker for a further report on a railway to serve the slate quarries and the iron-ore mines of the district. This was supplied by Messrs. Walker and Burges on 1st June, 1843, and recommended a line from Rampside to Kirkby with a branch to Barrow, practically as the railway was constructed ultimately. Considerable local opposition had been raised to Mr. Bintley's plan from Millwood to the Iron-ore Mines, already reported upon in October, 1842, for three principal reasons:—

1. The complicated intersection of the land, especially near Dalton.
2. Crossing all roads on the level; the turnpike road between Dalton and Ulverston and the public road from Dalton to Barrow being so crossed five times in four miles.
3. The unsuitability of the high level for other mineral produce and the increased cost of the works.

It was, therefore, proposed to carry the line to the north of Dalton, instead of winding round the hill to the south of the town, thence through Norman Gill Wood to Butts Mines, the Open Works and Old Hill Pits, and by 100 yards of tunnel to Crossgates and Herring Pits to Whitrigg and Lindal Moor. Every mine was thereby brought into direct communication with the line and the short branches proposed by Mr. Bintley obviated. A branch to Stainton left the main line near Tithe Barn and, apart from a gradient of 1 in 12 at the Stainton end, would be practically level. The route was said to be decidedly preferred by the

Iron-ore Companies. From Lindal Moor to Millwood was about $3\frac{1}{2}$ miles and the Stainton branch $2\frac{1}{8}$ miles, a total of less than 8 miles. The lines proposed were thus:—

Kirkby to Rampside	..	$11\frac{3}{8}$ miles
Branch to Barrow	..	$1\frac{1}{2}$,,
Iron-ore Railway	..	$5\frac{7}{8}$,,
		$18\frac{3}{4}$ miles

The estimated cost was £90,000, or, with the addition of £10,000 for contingencies £100,000. Barrow and Rampside both having advantages peculiar to themselves, Walker and Burges recommended that power to make a branch to each place be obtained, and included the cost in their estimate.[13] (Report on the Furness Railway to the solicitors of the Duke of Buccleuch and the Earl of Burlington. Walker and Burges, 23, Great George Street, 1st June, 1843).

Although this modest and isolated local system was all that remained of the great plans of a few years earlier, it was decided to proceed, and a railway in Furness became a probability at last. The Prospectus of the Furness Railway[14] read as follows:—

LANCASHIRE.
FURNESS RAILWAY.

"The inadequacy of the present means of transit in this District is undisputed. The delay and expense occasioned thereby, have for some considerable time operated to the serious detriment of its trade, and to the complete ex-

[13] In the autumn of 1843, when the original Furness Railway Prospectus was issued, the Iron-ore Mines Railway route was abandoned, and the line south of Dalton, Crooklands and Lindal substituted, in view of a possible extension to Ulverston — with slight modifications the present railway follows it.

[14] Copies of the original prospectus are now scarce, but the Kendall papers include two; the Barrow Public Library also catalogues one copy.

clusion from some markets of its mineral produce, though confessedly, both as regards its Iron Ore and Slate, of very superior quality. These considerations have induced the Duke of Buccleuch and the Earl of Burlington, both having an important interest in the property of the District, to receive favourably a Scheme which has been proposed to them for the formation of a Railway having for its main object the establishment of an easy and expeditious communication, connecting Ulverston (the capital of the District), the Iron Mines in the neighbourhood of Dalton, and the Slate Quarries with the Coast, at the two points best adapted for shipping, viz., Barrow and Piel. With this object however may, it is considered, be combined, a material prospective advantage. Such a Railway starting from the point where a Landing Pier from Fleetwood is to be made, under an Act of Parliament passed last Session, and being in the direct line across the Promontory of Furness to the Banks of the Duddon, must become part of any main line of Railway which may hereafter be continued to the North from Fleetwood, by Carlisle and the West Coast of England, and at once place this District (hitherto isolated, and as it were left out of all direct communication by land) upon the highway to all parts of England.

In order to ascertain the practicability, and probable cost of the best Line for the objects in view, Mr. Walker, the civil engineer, has been employed to make a Survey of the District, and a Report upon the subject. A Sketch is appended of the Line, which, after consideration, he recommends.

It is proposed in the first instance, with a view to save expense, to use Horse-power only, but the road would be so constructed as to make its adaptation to Steam-power very easy, in the event of the advantages of this additional outlay becoming apparent.[15]

[15] At an early stage it was decided to have locomotive traction.

Upon such a road the average speed for passengers with Horse-power might be safely calculated at from eight to ten miles an hour; and the general inclination of the Line to the shore of the Duddon is described as highly favourable to the use of Locomotive Engines, if steam power should at a future time be adopted upon it.

The distances are shown in the Plan.

As regards the cost, Mr. Walker's Estimate amounts to £90,000, to which he proposes to add £10,000 for contingencies, and incidental expenses.

The Capital required would therefore be £100,000, which it is proposed to raise in shares of £50 each.

The calculation of return for this Capital, founded upon the present traffic of the District, and estimates lately made, is as follows, viz.:

100,000 tons of iron ore, at 1/6d. per ton ..	£7,500
15,000 tons of slate, at 1/6d. per ton ..	1,125
25,000 tons of coals, and general traffic ..	1,875
20,000 passengers	2,000
	£12,500
Deduct expense of maintenance of way, 25 per cent	3,100
Surplus	£9,400

Thus showing a surplus to pay £8 per cent. on the above Capital, and £1,400 for contingencies.

It is believed that experience will prove this Estimate, as regards the probable receipts, to be underrated, but the Promoters having been anxious not to mislead, have considered it alone, with a view to the ulterior improvement and advantages which all the property of the District must derive from improved means of communication, and have therefore estimated both the probable traffic and the rates, at as low an amount as the information they possess will authorise.

In the hope and expectation that as well those locally

interested, as the public generally will regard this undertaking favourably, the Promoters submit this statement for consideration, at the same time engaging, — providing it meets with that encouragement which they believe it to deserve, — to take Shares to the extent of £20,000, and otherwise to aid in its completion, so far as lies in their power as owners of property in the District.

Applications for Shares may be made in London, to Messrs. Wilmer, and Mr. William Currey, jun., 6, Old Palace-yard, Westminster; Messrs. Oddie and Lumley, 18, Carey Street; and Messrs. MacRae, stockbrokers, 57, Moorgate Street. And in Furness, to Mr. John Cranke, solicitor, Ulverston; Mr. John Buckley, Allithwaite Lodge, Milnthorp; and Mr. William Butler, Dalton."

The projectors having decided to apply to Parliament for powers, Dorington, Hayward and Ellicombe, Parliament Street, Westminster, were appointed agents for the Bill, and W. Wilmer, of Old Palace Yard, Westminster, the Solicitor. Notices were published in the London Gazette, on November 8th, 18th, and 25th, 1843, these stating that the railway would terminate "in the parish and town of Ulverstone at or near the road leading from Ulverstone to Urswick." Parliamentary Plans were deposited on the last day of the same month. The Subscription Contract was signed on 25th January, 1844, by the following subscribers:—

	Amt. of Sub.	Amt. paid up
	£	£
Duke of Buccleuch, Montagu House, London	15,000	1,500
Earl of Burlington, 10 Belgrave Square, London	15,000	1,500
Henry Hoyle Oddie, Esq., 65 Portland Place, London	1,500	150

	Amt. of Sub.	Amt. paid up.
	£	£
Charles Rivers Freeling, Esq., 43, Weymouth Street, London	1,000	100
John Iltid Nicholl, Esq., Doctor's Commons, London	1,000	100
Robert Wheatley Lumley, Esq., 9, Charles Street, London ..	3,000	300
Frederick John Howard, Esq., 1, Belgrave Square, London ..	1,000	100
John Haworth, Esq., The Close, Litchfield	1,000	100
Benjamin Currey, Esq., Old Palace Yard, London	15,000	1,500
Wm. Pott, Esq., Bridge St., Southwark	3,000	300
	(56,500)	(5,650)

These were the original promoters of the Bill; the following subscribed, or increased their subscription after it had been deposited:—

	Amt. of Sub.	Amt. paid up.
	£	£
Robert Wheatley Lumley, Esq., 9, Charles St. London	1,000	200
John Iltid Nicholl, Esq., 11, Godliman Street, Doctor's Commons, London	1,000	200
Wm. Pott, Esq., Bridge St., Southwark	2,000	400
Lord Brooke, Warwick Castle ..	1,100	550
Joseph Hallam, Esq., 29, Devonshire Hill, Hampstead ..	500	100
Benson Harrison, Esq., Greenbank, Ambleside		
Montague Ainslie, Esq., Grisedale, Hawkshead	1,000	500
Richard Roper, Esq., Gawithfield, Ulverston		
William Jennings, Esq., Evershot, Dorset	1,000	500

	Amt. of Sub.	Amt paid up.
	£	£
John Robinson McClean, Esq., 17, Great George St., Westminster[16]	1,050	210
Joseph Parton, Esq., Chatsworth, Derby	1,000	200
Edward Coward, Gentleman, Kirkby, Lancs.	100	50
John Cranke, Esq., Ulverston ..	250	125
James Walker, Esq., 23, Great George Street, Westminster ..	5,000	1,000
Maria Elizabeth Bruce, Marchioness of Ailesbury, 41, Grosvenor Square, London	3,500	1,750

The slight local support is somewhat remarkable.

The Report of the Parliamentary Committee on the Furness Railway Bill, dated 26th March, 1844, was favourable. It stated that the anticipated income was £9,024 6s. 8d. (Passengers £500, Goods £8,524 6s. 8d.), the revenue being principally from iron ore and slate. The gradients and curves were satisfactory and the estimated cost for completing the railway (£75,000) appeared fully adequate. The estimated charge of the annual expenses of the railway when completed was 40/-s. per cent. and the revenue would meet those charges and still allow a profit to the projectors. Alfred Burges, the engineer, was examined in support of the Bill, but no engineers against it, and no petitions opposing were presented.

The Bill passed and received the Royal Assent on 23rd May, 1844, the authorised capital being £100,000; £75,000 in shares and £25,000 borrowed loan.

A contract for the construction of the railway was signed with Messrs. John and William Tredwell, their tender being dated 12th February, 1845. For the lines Barrow to Crooklands, Millwood to Kirkby Slate Wharf,

[16] Appointed Engineer to the Company.

and Salthouse to Concle (Rampside) the price was £47,788 19s. 6d., if completed before 30th September, 1845. If completion was delayed until 31st December, £1,500 was to be deducted, or £1,850 if not completed before 31st March, 1846.

The Formation was to be 14 ft. wide (to permit of double lines later if found desirable), but the original railway was single-line only.[17] Mr. Kendall's notes give full details of the contract and it may be of interest to quote the day schedule:—

	s.	d.	
Excavators	3	3	per day of 10 hours.
Labourers	3	0	,, ,, ,, ,, ,,
Masons	5	0	,, ,, ,, ,, ,,
Bricklayers, Carpenters & Smiths	4	6	,, ,, ,, ,, ,,
Horse & Cart	7	6	,, ,, ,, ,, ,,

The first Meeting of the Furness Railway Company was held at the Solicitor's Office in London on 26th February, 1845, when the Directors reported the signing of the contract as above, but that the portion of the line from Lindal to Ulverston had been abandoned for the present, as it was not likely to prove remunerative. Benjamin Currey was the first Chairman of the Company and Arthur Currey the first Secretary.

It was decided to erect a railway pier or wharf at Barrow and Messrs. Tredwell accepted the work on 17th June, 1845.

Work on the line proceeded fairly satisfactorily with Mr. F. C. Stileman as Resident Engineer.[18]

[17] The work commenced with the construction of a timber bridge for a double line over Salthouse Beck. It was rendered unnecessary when the stream was diverted into Barrow Docks and was removed on 23rd March, 1873.

[18] A pupil of Mr. J. R. McClean's with whom he entered into partnership later, and went (in May, 1849) as Resident on the South Staffs. Railway. His son, Mr. Frank Stileman, received his early training, as a contemporary of Mr. W. B. Kendall's, in the Furness Rly. Engineer's Office and eventually became a Consulting Engineer in London. Mr. Kendall joined him there as his Chief Assistant about 1895.

A special meeting became necessary on 1st November, 1845, the increased costs of labour and iron for rails, making it necessary to raise additional capital. It was decided at the same time to extend to Broughton-in-Furness and to Ulverston — the latter on a slightly different route from that proposed by Walker. Plans were at once deposited and the Subscription Contract for the Furness Railway Extension (1846) was signed on 23rd December, 1845. Most of the original subscribers again signed and, in addition, the following, representing more local support:—

	Amt. of Sub.	Amt. paid up.
	£	£
John Brogden, Esq., 10, Sussex Gardens, Hyde Park, London	560	56
John Barraclough Fell, Spark Bridge, Lancs...	1,000	—
John Cranke, Esq., Ulverston ..	260	26
Edward Coward, Gentleman, Kirkby	100	10
Harrison, Ainslie & Roper, Esquires	600	60
Edward Coward, Esq., Kirkby (2nd Sub.)	60	—
John Cranke, Esq., Ulverston (2nd Sub.)	120	—
Harrison, Ainslie & Roper, Esquires (2nd Sub.)	400	—

The Extension Act (1846) was duly obtained, having been piloted through Parliament by the Company's Engineer, J. R. McClean.

At the end of 1845, rolling stock was ordered — 2 locomotives of the "Bury" type with huge copper domes[19] and 50 specially designed side-tip wagons for

[19] Other "Bury" type engines were ordered at various times up to 1861. No. 3 was the famous "Copper Nob," exhibited at Barrow Central Station until the air raids of 1941. It is still in existence, preserved pro. tem. at Horwich Works.

the ore trade. The engines were built at Liverpool and delivered by sea.[20]

The whole line both to Crooklands and Kirkby was opened for mineral traffic on 3rd June, 1846. Major-General Pasley inspected the railway for the Board of Trade in July and it was finally passed and opened for traffic on 12th August, 1846. According to Mr. Harper Gaythorpe (Church Congress Guide to Barrow-in-Furness, 1905. 48) the only accommodation first provided for passengers was a sheep-van. James Ramsden had been appointed Manager of the Engineering Department. Only 23 years of age, he was a remarkable man, who from his advent was impressed with the natural advantages of Barrow and it was largely due to his foresight that the place became so large and important, though his vision of a town of 100,000 population has never been realised. A Furness tradition states that when the first train ever to run on the railway was ready to start, it was discovered that the engine-driver was too drunk to operate, and Mr. Ramsden drove the engine instead.

At the commencement the new railway was successful and it was reported to a Company Meeting, held in London on 27th February, 1847, that receipts from Minerals, Merchandise, etc. were £4,639 10s. 8d. and from passengers (for 2 months) £467 2s. 11d. A dividend of 4/-s. for the half year was declared, and it was decided to double the line between Dalton and Rampside Junction (Roose), while an extension to Newby Bridge was contemplated. The Directors reported that they had purchased Furness Abbey Manor House to stimulate tourist traffic and its conversion to a Hotel was nearly completed, while arrangements had been made to purchase a steamer to run between Piel and Fleetwood in the summer. It was also

[20] Although not entirely reliable, interesting and amusing information is given by Joseph Fisher: *Popular History of Barrow-in-Furness*, 1891. 83-90.

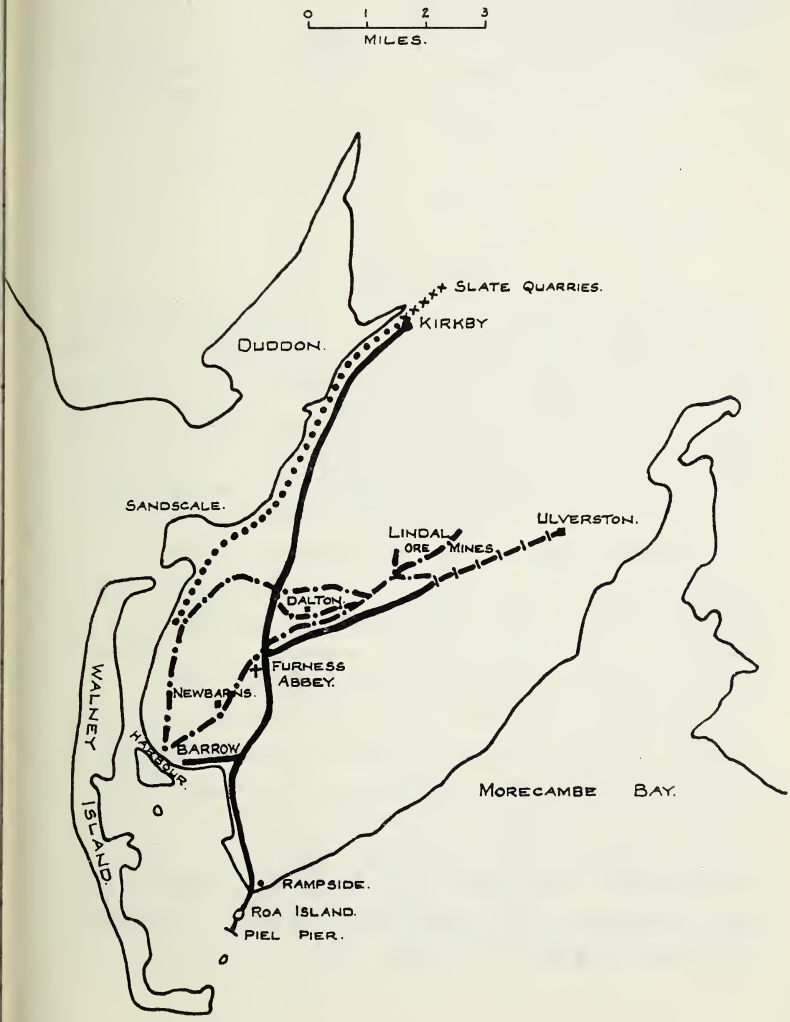
EARLY RAILWAY SCHEMES IN LOW FURNESS.

PROPOSED HORSE RAILWAYS 1842 (JOB BINTLEY)

PROPOSED RAILWAY FOR SLATE 1843 (J. WALKER)

FURNESS RAILWAY AS EXECUTED 1843/5 (WALKER & BURGES)

FURNESS RAILWAY AS PROJECTED 1843 (WALKER & BURGES)



stated that the Share Capital had been increased to £100,000 and an additional £33,100 borrowed. The Parliamentary Expenses as given in the Balance Sheet were:—

	Original Act.			Extension Act.		
	£	s.	d.	£	s.	d.
Law Expenses, Witnesses, etc. ..	1,340	12	3	967	19	10
Parliamentary Agents, including Fees of Parliament	869	8	0	400	0	0
Engineering, Surveying, Maps etc.	3,669	15	4	(included in preceding item.)		
Total costs ..	£7,247	15	5			

PIEL PIER.

Mention of a steamer service to Fleetwood requires some diversion from the history of the railway, to refer again to the activities of John Abel Smith at Roa Island. His Act of 1843 allowed ten years for completion of his Pier and the Embankment to Rampside. He had not hurried the works, therefore, and as the Furness Railway's Rampside Branch would be of little value without them, the Company entered into an agreement for him to complete before May, 1847; they, for their part, undertaking to extend their line along the embankment to the island. By some oversight, however, the agreement included nothing about opening the Pier for traffic.

The steamer referred to by the Directors was the "Zephyr," which proved unsuitable and was employed for a time by the Liverpool, Fleetwood and Furness Steam Packet Co. for cargoes between Liverpool and Barrow, but the service did not answer expectations and was discontinued. In August, 1849, the Directors stated that they were trying to dispose of her, but they were unable to do so before the end of 1850.

The little steamer "Windermere," which had been plying between Liverpool and Ulverston with goods and passengers since 1834[21] was then bought about the end of March, 1847, renovated, renamed "Helvellyn" and made ready for the Fleetwood service. Mr. Smith having completed his pier and embankment as agreed and the railway company having extended the line from Concle, the "Helvellyn" was advertised to sail between Piel Pier and Fleetwood on and after 24th May, 1847. At this point, John Abel Smith, taking advantage of the omission in the agreement, refused to allow passengers to land at his pier, except on terms unacceptable to the Railway Company. The sailings accordingly had to be made to Barrow Pier, commencing on June 1st, and they were continued till October 31st. A copy of the original time-table is in our possession and is a most interesting document. It shows the daily sailing times in both directions, which, being dependent on the tides at Barrow, were highly inconvenient — on some days leaving Fleetwood as early as 6 a.m. and on others as late as 3 p.m., with many days when the times did not allow of train connection.[22] A list of fares is given as follows:—

FARES.

From Fleetwood To	Single Fares 1st Class	Single Fares 2nd Class	Return Tickets 1st Class	Return Tickets 2nd Class
	s. d.	s. d.	s. d.	s. d.
Barrow Pier	3 0	2 0	4 6	3 0
Furness Abbey	4 6	3 0	6 10	4 6
Dalton	4 6	3 0	6 10	4 6
Kirkby	5 4	3 6	8 0	5 4

[21] See Melville and Hobbs: *Furness Travelling and Postal Arrangements in the 18th and 19th Centuries.* CW2, XLVI, 97-98.

[22] Stephen Soulby commenced to publish his *Ulverston Advertiser* in October, 1847, and thereafter included in each issue time-tables of local transport which are most interesting and informative.

From Kirkby To	Single Fares 1st Class	Single Fares 2nd Class	Return Tickets 1st Class	Return Tickets 2nd Class
	s. d.	s. d.	s. d.	s. d.
Furness Abbey	1 6	1 0	2 4	1 6
Barrow Pier	2 4	1 6	3 6	2 4
Fleetwood	5 4	3 6	8 0	5 4

From Dalton To	Single Fares 1st Class	Single Fares 2nd Class	Return Tickets 1st Class	Return Tickets 2nd Class
	s. d.	s. d.	s. d.	s. d.
Furness Abbey	0 8	0 6	1 0	0 8
Barrow Pier	1 6	1 0	2 4	1 6
Fleetwood	4 6	3 0	6 10	4 6

Furness Abbey is advertised as having been opened by Mr. William Parker of the "Sun" Inn Ulverston, and travel to the Lakes is detailed.

"Smoking is strictly forbidden at the Stations and in the Carriages."[23]

A further result of Mr. Smith's action was reported at the Company's Meeting in February, 1848, traffic on the Rampside line having suffered. An injunction was therefore sought restraining John Abel Smith from

[23] This was quite customary, most Companies having bye-laws prohibiting the practice. At Barrow Public Library is preserved an original copy of the regulations made and displayed by the Lancaster and Carlisle Railway for regulating travelling on the railway and that of the Lancaster and Preston line. "4th. Smoking tobacco is strictly prohibited, both in the Carriages and in the Company's Stations. Every person smoking tobacco is hereby subjected to a penalty not exceeding FORTY SHILLINGS; and every person persisting in smoking tobacco in a Carriage or Station after having been warned to desist by the Guard in charge of the train, or any Officer of the Company, shall, in addition to incurring a penalty not exceeding FORTY SHILLINGS, be immediately, or if travelling, at the first opportunity, removed from the Company's premises. 21st November, 1857"; see also W. W. Tomlinson: *The North Eastern Railway, Its Rise and Development*", 1915. 425.

obstructing the use of his Pier at statutory tolls. On motion, however, Vice-Chancellor Knight Bruce refused to grant the injuction (Furness Railway Co. v. Smith. 1 De Gex & S). Negotiations were resumed and the "Helvellyn" began to sail at fixed hours to Piel Pier in May, 1848. There was no winter service in 1848-49 and the "Piel Branch was discontinued for the present as not paying expenses."

Strained relations between Mr. Smith and the Railway Company continued. In 1847 he had obtained an Act to enlarge his Pier by a jetty on the south side and also to build two new piers, one on the east side and one on the west side of the island. They were never constructed and it is believed were only "blocking" schemes designed to stop the Railway Company applying for powers to obtain a footing on Roa Island.

In February, 1849, the Company built a new "steamboat wharf" at Barrow and threatened to remove the steamer traffic from Piel — probably this was bluff, as Smith had made some proposals for the railway to purchase his undertaking. In 1851, he promoted a Bill for a railway from Concle to the Lindal Mines.[24] The Furness Railway at once laid a low level siding at Lindal Cote, blocking access to Lindal Moor Pits under their line, opposed the Bill, which was abandoned in 1852, and ultimately terms were agreed for the Furness Railway Company to lease the embankment and the whole of the Roa Island undertaking for a term of 999 years. Before the lease was signed, however, a great storm, on 27th December, 1852, wrecked one third of Piel Pier, destroyed a large wooden goods shed on the island and seriously damaged the embankment.

[24] Gradon, op. cit. states (page 9) that the Furness Railway promoted the scheme. This is probably a misprint, for it is obviously an error. In their report dated 27th February, 1852, the Furness Railway Directors noted the Bill, but stated there appeared to be no local support, except from the owner of Piel Pier, and that it was their intention to oppose the Bill in Parliament.

John Abel Smith, unwilling to face the cost of repairs, attempted to hold the Company to the terms arranged, refused arbitration and threatened legal action. Litigation was avoided, however, for his case was weak, and in the end he sold the whole of his rights and property to the Company for £15,000, the Act confirming the purchase being passed in 1853.

The Furness Railway had repairs put in hand, the expenses being:—

	£	s.	d.	£	s.	d.
To James Wearing, builder, of Ulverston, who re-erected the Wooden Goods Shed in the summer of 1853				397	10	6
Less old material used again or sold				112	1	6
				285	9	0
Aug. 31st, 1853. John Clarke						
Cost of repairing Pier	227	13	6			
Damage by steamer	36	10	10			
Damage by sailing vessel	10	16	8			
Removing old shed & office	42	0	0			
				317	1	0
Cost of repairing Rampside Embankment				1042	8	2
				1,644	18	2
Damage to Salthouse Embankment was also repaired at a cost of				381	8	5
				£2,026	6	7

Piel Pier continued to be used until the various steamer services then existing were removed to the steamer berths in Walney Channel near Ramsden Dock Entrance, in 1882. It was then left to fall into decay and was finally removed in 1891.

We now return to the review of the Furness Railway progress.

Most of the Company's half-yearly meetings were held in London and some important items in the reports are as follows:—

28th August, 1847. The double lines from Dalton to Rampside Junction had been completed and the contract for the line from Dalton (Crooklands) to Lindal had been let. Dividend 4%.

29th February, 1848. The Kirkby to Broughton extension had been inspected for the Board of Trade on the 23rd instant. The depression in the money market affected the undertaking and the dividend for the second half of 1847 fell to 2%.

When the Broughton extension opened the fares were revised and the new Table read:—

FURNESS RAILWAY.

TABLE OF FARES

ON AND AFTER 20TH APRIL, 1848.

STATIONS	Single Fares			Return Tickets		
	1st Class	2nd Class	3rd Class	1st Class	2nd Class	3rd Class
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
From Barrow to						
Rampside	1 3	0 10	– –	– –	– –	– –
Piel	1 3	0 10	– –	– –	– –	– –
Furness Abbey	1 6	1 0	– –	2 6	1 6	– –
Dalton	1 6	1 0	0 6	2 6	1 6	0 9
Kirkby	2 6	1 8	0 10	4 0	2 6	– –
Broughton	3 6	2 6	1 2	5 6	4 0	– –
From Broughton to						
Kirkby	1 0	0 8	0 4	1 6	1 0	0 6
Furness Abbey	2 9	1 10	1 0	4 2	2 9	– –
Dalton	3 0	2 0	1 0	4 6	3 0	1 6
Barrow	3 6	2 6	1 2	5 6	4 0	– –
Rampside	3 6	2 6	– –	5 6	4 0	– –
Piel	3 6	2 6	– –	5 6	4 0	– –
Fron Dalton to						
Furness Abbey	0 6	0 4	– –	0 9	0 6	– –
Barrow	1 6	1 0	0 6	2 6	1 6	0 9
Rampside	1 6	1 0	– –	2 6	1 6	– –
Piel	1 6	1 0	– –	2 6	1 6	– –
Kirkby	2 0	1 4	0 8	3 0	2 0	1 0
Broughton	3 0	2 0	1 0	4 6	3 0	1 6
From Furness Abbey to						
Dalton	0 6	0 4	– –	0 9	0 6	– –
Barrow	1 6	1 0	– –	2 6	1 6	– –
Rampside	1 6	1 0	– –	2 6	1 6	– –
Piel	1 6	1 0	– –	2 6	1 6	– –
Kirkby	1 9	1 2	0 8	2 8	1 9	– –
Broughton	2 9	1 10	1 0	4 2	2 9	– –
From Kirkby to						
Broughton	1 0	0 8	0 4	1 6	1 0	0 6
Furness Abbey	1 9	1 2	0 8	2 8	1 9	– –
Dalton	2 0	1 4	0 8	3 0	2 0	1 0
Barrow	2 6	1 8	0 10	4 0	2 6	– –
Rampside	2 6	1 8	– –	4 0	2 6	– –
Piel	2 6	1 8	– –	4 0	2 6	– –
From Rampside to						
Piel	0 6	0 4	– –	0 9	0 6	– –
Barrow	1 3	0 10	– –	– –	– –	– –
Furness Abbey	1 6	1 0	– –	2 6	1 6	– –
Dalton	1 6	1 0	– –	2 6	1 6	– –
Kirkby	2 6	1 8	– –	4 0	2 6	– –
Broughton	3 6	2 6	– –	5 6	4 0	– –
From Piel to						
Rampside	0 6	0 4	– –	0 9	0 6	– –
Barrow	1 3	0 10	– –	– –	– –	– –
Furness Abbey	1 6	1 0	– –	2 6	1 6	– –
Dalton	1 6	1 0	– –	2 6	1 6	– –
Kirkby	2 6	1 8	– –	4 0	2 6	– –
Broughton	3 6	2 6	– –	5 6	4 0	– –

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29th August, 1848. The Earl of Burlington, Mr. James Walker and Mr. (afterwards Sir) Joseph Paxton were elected as directors, the first named to act as chairman.[25]

The meeting was onerous, the Balance Sheet was unsatisfactory and no dividend was possible. The extension towards Ulverston had been postponed.[26]

Economies were decided upon. Mr. McClean wrote—"Had a most successful meeting. Ramsden will be cut down to £120.[27] Committee is to go down to effect reforms . . ."

28th February, 1849. Large reductions had been made in establishment charges, but working showed a loss. Cottages had been built at the level crossings at Salthouse, Thwaite Flat and Ireleth and gatekeepers dispensed with.

FINANCIAL STATEMENT (Half Year).

Expenditure.	£	s.	d.	Receipts.	£	s.	d.
Rates and Taxes	156	13	0	Passengers ..	513	2	8
Loco. Power Acct.	1159	14	8	Goods and Merchandise	4846	5	9
Traffic, Salaries, &c.	1626	2	8	Rents	99	15	9
Permanent Way	983	9	3	Miscellaneous	88	4	10
Salaries – Secty., Gen. Manager, Clerks, Office Expenses ..	1052	4	9	Balance from last settlement ..	10	16	6
	4978	4	4		5558	5	6
Interest on Debentures ..	1373	14	10	Balance ..	793	13	8
	£6351	19	2		£6351	19	2

[25] The first Chairman, Benjamin Currey, Clerk to the House of Lords, died suddenly in the House before the meeting. The Directors' Report bears no signature and, curiously enough, no reference seems to have been made to the occurrence. By some oversight, Mr. Gradon appears to have confused Benjamin Currey with the Secretary, Arthur Currey, hence the incorrect statement on page 9 of his book.

[26] The Contractors, Fell & Jopling, were stopped on 1st June, 1848, and compensated for the work done, valued at £5,579. 1s. 8d., plus £985. 0s. 0d. for plant taken over. Mr. Gradon mentions opposition in Ulverston to a railway and this may well have had an influence on the matter.

[27] When Arthur Currey resigned the Secretaryship, in 1850, James Ramsden was appointed General Manager and Secretary, at a salary of £300 and commission: On a dividend of 3% an additional £100, and an additional £100 for each further 1% paid.

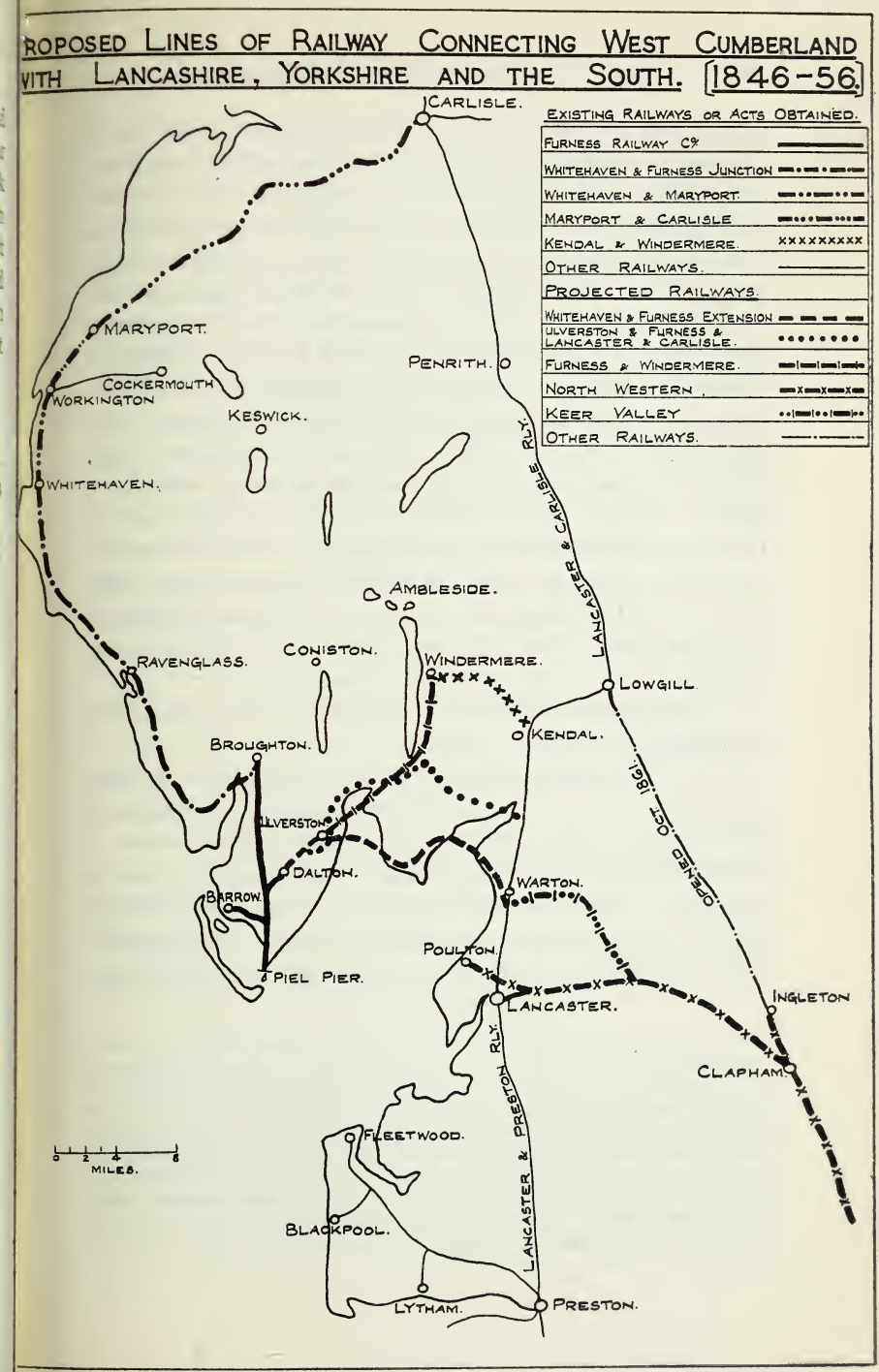
29th August, 1849. The management alterations had produced a good effect. Receipts for the half year exceeded expenditure by £3,500, the main line work towards Lindal had been re-started and the Butts branch commenced (it was completed before the end of that year). The Whitehaven to Ravenglass Railway had opened on 19th July, a coach was connecting from Ravenglass to the Furness Railway terminus at Broughton.

FINANCIAL STATEMENT (Half Year).

Expenditure.	£	s.	d.	Receipts.	£	s.	d.
Rates and Taxes	144	1	8	Passengers ..	376	17	3
Loco. Power ..	1159	4	6	Minerals, Goods &c.	8657	7	3
Traffic Clerks, etc.	1536	0	2	Rents	131	2	6
Permanent Way	655	18	11	Miscellaneous	47	1	10
Salaries – Secty., Gen. Manager, Clerks ..	795	12	6		9212	8	10
Compensation ..	65	8	11				
	4356	6	8				
Interest on Debentures ..	1345	6	11	Less Balance last half year	793	13	8
	5701	13	7				
Balance ..	2717	1	7				
	£8418	15	2		8418	15	2

Although the figures justified a dividend of 2% and the Directors prided themselves on the effect of their economies, it will be observed that the results were largely due to increased receipts owing to an improvement in the iron trade.

Reference to the opening of a railway between Whitehaven and Ravenglass requires brief mention of railway progress to the north in Cumberland. The Maryport and Carlisle railway and the Whitehaven Junction Railway (Whitehaven to Maryport) had been well


PROPOSED LINES OF RAILWAY CONNECTING WEST CUMBERLAND WITH LANCASHIRE, YORKSHIRE AND THE SOUTH. [1846-56.]
EXISTING RAILWAYS OR ACTS OBTAINED.
FURNESS RAILWAY C°
WHITEHAVEN & FURNESS JUNCTION
WHITEHAVEN & MARYPORT.
MARYPORT & CARLISLE
KENDAL & WINDERMERE.
OTHER RAILWAYS.
PROJECTED RAILWAYS.
WHITEHAVEN & FURNESS EXTENSION
ULVERSTON & FURNESS & LANCASTER & CARLISLE.
FURNESS & WINDERMERE.
NORTH WESTERN.
KEER VALLEY
OTHER RAILWAYS.
CARLISLE.
MARYPORT.
COCKERMOUTH
WORKINGTON
KESWICK.
PENRITH.
WHITEHAVEN.
AMBLESIDE.
RAVENGLASS.
CONISTON.
WINDERMERE.
LOWGILL.
KENDAL.
BROUGHTON.
ULVERSTON
DALTON.
BARROW.
PIEL PIER.
WARTON.
POULTON.
LANCASTER.
INGLETON
CLAPHAM.
FLEETWOOD.
BLACKPOOL.
LYTHAM.
PRESTON.
LANCASTER & CARLISLE RLY.
LANCASTER & PRESTON RLY.
OPENED OCT. 1861.
0 2 4 6
MILES.

established for some time. George Stephenson had been appointed Consulting Engineer to the latter Company and while visiting Cumberland, in 1844, he rode over the district south of Whitehaven with the Earl of Lonsdale, whom he impressed with the idea of a railway to the south to aid development of the mineral wealth of the area, in which the Earl, as owner of the Whitehaven coal mines, was interested. His Lordship formed a committee and, as a result, the prospectus of the Whitehaven & Furness Junction Railway was issued and Acts obtained on 21st July, 1845, and 3rd August, 1846. In spite of the trade depression then existing and advice that it would be well to abandon the scheme, the Earl of Lonsdale, as chairman of the company, and the directors decided to proceed, and construction commenced early in 1847. (J. Simmons, op. cit., 9; Furness Railway Magazine Vol. 1, No. 1, January, 1921, 3; L.M.S. Railway Magazine, Vol. 1, No. 10, August 1924, 351).

It was opened as far as Ravenglass in July, 1849, and to Bootle on 1st July, 1850.[28]

The original plans provided for a crossing of the Duddon by means of an embankment and bridge from Holborn Hill Station (now Millom) to Dunnerholme, where a junction with the Furness Railway line to Kirkby was to be made. This was found to be too costly, the additional capital was not forthcoming and the railway was therefore carried along the north shore of the Duddon, past Under

[28] For a full account reference should be made to *A Handbook of the Whitehaven and Furness Railway . . . .*" by John Linton (London: Whittaker & Co.; Whitehaven: R. Gibson & Son & Callander & Dixon, 1852) also to Gradon op. cit. (Chaper 3). The latter includes a time-table for 1st July, 1850 and another for 1st November, 1850, but, strangely enough, the former was not the first time-table for the Bootle section. Mr. Kendall's papers include an original (very similar to the July issue) for " on and after 1st June, 1850," from which we conjecture that the section was not ready quite so early as had been anticipated. Progress may also be traced by a study of the time-tables published weekly in Soulby's *Ulverston Advertiser* at this period.

Hill (now Green Road).[29] It crossed the river by a short timber viaduct near Foxfield and then ran into Broughton on its own line to join the Furness Railway. Apart from passing loops, the railway was a single line. The completion to Broughton was passed by the Board of Trade Inspector on 28th October, 1850, and was the cause of much celebration reported in the "Whitehaven Herald" for 2nd November, 1850. At a dinner held at "The Old King's Head," Broughton, the Earl of Lonsdale spoke optimistically of the future and of other lines to join theirs, including one from the copper mines at Coniston and another via Ulverston across Morecambe Bay to the Lancaster and Carlisle Line.[30] Through connections between Carlisle and Piel with its steamer services were advertised, although through trains were not possible, there being no passenger rail link between the W. & F. J. Railway terminus at Newtown (Preston Street) Whitehaven and that of the W. J. Railway at Bransty. The Corkickle tunnel was commenced, and when it was finished, in 1852, it completed an actual line from Carlisle to Piel. This fact was to be of great importance some years later.

Extracts from the Furness Railway Pay Sheets of 1850 will prove of considerable value to those interested in labour conditions a century ago:—

John Hunt, Permanent Way and Wagon Inspector	36/-- per week.
Richard Mason, Locomotive Superintendent	42/– ,, ,,
(*Both continued at these wages for the next eight years*).	

[29] *Furness Railway Magazine*, ibid.

[30] This recalls a curious item of Furness Railway history, mentioned by Gradon (op. cit. page 10). The first Whitehaven and Furness Junction Railway Bill was promoted in 1845 and included a scheme for a line through Ulverston to Carnforth. The idea was dropped for technical reasons, but as the Furness Railway Co. had commenced construction, the directors might have been expected to provide vigorous opposition to the proposed invasion of their territory. Instead, they expressed regret to the potential invaders that their plan had failed. See also *Furness Railway Magazine*, Vol. 1, No. 2, April 1921, 28.

2 Joiners — Dickinson and Pennington ..	24/–	,,	,,
2 Smiths — Ramsbottom and Huddleston	25/–	,,	,,
2 Strikers	16/–	,,	,,
2 Engine Drivers — Hudson at 40/– and Battersby at	35/–	,,	,,
2 Stokers	21/–	,,	,,
1 Fitter	30/–	,,	,,
Clerk — Wright Bolton	19/3	,,	,,

(N.B. Thomas Gray Bissett and James Ramsden, salaried officials, do not appear on the weekly sheets).

The above were the General Office and Locomotive staffs.

On the line were 32 men, as follows:—

1 Pointsman at Millwood Junction	15/–	,,	,,
2 Guards each at	20/–	,,	,,
6 Porters each at	16/–	,,	,,
Walter McComb, weigher at Crooklands ..	17/–	,,	,,
Station Clerks:—			
Barrow	27/–	,,	,,
Piel	27/–	,,	,,
Dalton	19/3	,,	,,
Furness Abbey	19/3	,,	,,
Broughton	18/–	,,	,,
Kirkby	16/–	,,	,,
Permanent Way:—			
5 Gangers each at	18/–	,,	,,
10 Labourers (Platelayers) each at ..	15/–	,,	,,
James Helen, Mason	20/–	,,	,,

(N.B. In 1853 the Gangers were advanced to 20/– and Labourers to 17/–. When the line first opened the Gangers received 24/– and the Labourers 18/– to 21/–, but their wages were reduced at the end of 1848 when the establishment charges were curtailed).

The history of the Furness Railway is continued as a summary of the Directors' Reports (references to Piel Pier already given are omitted).

1850. Wheatcroft, the contractor for the extension from Crooklands to Lindal (including Lindal tunnel), became financially embarrassed in June, and the work was completed by the Company and by sub-contracts.

A wet winter delayed the tunnelling operations. 2nd half year dividend 2½%.

1851. The line to Lindal was passed on 21st May on condition that only one engine was used until the Electric Telegraph was completed.[31] The sleepers on the Piel Branch were renewed with stone blocks — the only case of stone blocks ever used as sleepers on the Furness Railway. By arrangement with the Lancashire and Yorkshire Railway, two steamers were now plying to and from Fleetwood, while another sailed to Poulton Harbour, the terminus of the North-Western Railway.[32]

During 1850 three schemes had been proposed to connect Ulverston with the Lancaster & Carlisle Railway, viz.:— to Carnforth by the present line, and two plans via Newby Bridge, the first named being deposited in Parliament. As a result it was decided to proceed with the line to Ulverston and the contract was let in June, 1851, to George Boulton of Leeds, who had done work on the Leeds and Bradford Railway.

Dividends — 1st half year 3%. 2nd half year 3%. Debenture interest reduced from 5% to 4½%.

1852. The Ulverston line was completed to Lowfield House and passed on 17th May. 30 new iron-ore wagons had been added to stock and new engines ordered, but a strike had delayed their delivery. The dividend increased to 3½% for both half years.

1853. The construction of the Ulverston & Lancaster Railway had been retarded by bad weather, work on the extension to Ulverston from Lowfield House was not being pushed therefore. In January, Inspector Nicholas Lawson reported that Boulton was "scamping" his

[31] "The Electric Telegraph between Dalton and Lindal worked for the first time on Thursday, 5th June, 1851." (*Ulverston Advertiser*, 12th June, 1851).

[32] i.e. The "Little" North-Western from Skipton to Poulton (Morecambe), with a branch from Clapham to Ingleton.

work and W. L. Rutton[33] was made Resident Engineer at a salary of £80 per annum.

Additional pier accommodation was to be provided at Barrow for Messrs. Schneider & Co., who were to build two iron screw steamers to ply regularly between Barrow and South Wales with iron-ore.[34]

1854. Was a prosperous year, the iron-ore trade was good and traffic consequently increased. Additional wagons and 2 more engines were ordered, while the line from Salthouse Junction (Roose) to Barrow Pier was doubled,[35] advantage being taken of the work to increase the Salthouse embankment and so guard against damage by such a storm as that of 27th December, 1852.

William Strode of St. Martin-le-Grand, London, laid a water supply to Barrow Station and the Company's cottages from the Abbey Well near Furness Abbey Station.[36] He also built a gasworks in Barrow Railway Yard to light the Company's premises, and another at Furness Abbey to light the hotel, station and platforms. The Ulverston water works company refused to supply Ulverston Station and the Railway obtained its own from Pennington Beck; Strode laying the pipes and erecting a tank at the station, between June and September.[37]

The Electric Telegraph was installed between Barrow and Ulverston and to Park, being in use from August,

[33] Formerly a pupil of McClean and Stileman. Assisted in the survey of the Ulverston & Lancaster Railway in 1850, then was engaged on the Lindal tunnel and set out the line from Lindal to Ulverston. He joined his old firm in South Staffordshire in 1856.

[34] These steamers did not prove a commercial success and were afterwards converted to sailing vessels.

[35] The iron rails for this work came from South Wales and were delivered by sea at Barrow Pier in January, 1854, the first rails from this source used on the Furness Railway.

[36] See Harper Gaythorpe in *Proc. Barrow Naturalists' Field Club*, XVII, 111.

[37] The Furness Railway Company's Inspector, John Palmer, came from Abergavenny, in December, 1853, at a wage of 30/- per week and stayed about a year. He was unable to agree with Strode's assistant to the extent that both men appeared before the Ulverston Magistrates in August (*Ulverston Advertiser*, 31st August, 1854).

and it was decided to extend it to Broughton, as the Whitehaven & Furness Junction Railway had agreed to install it also. By then the Ulverston extension was complete as a single line and had been open for traffic from 7th June. Pennington Cutting[38] had taken longer to excavate than was anticipated and Boulton, the contractor, refused the risk of diverting Pennington Beck, so the work was done by railway men under Inspector Lawson. (The weirs were not all finished till June, 1856). Until the permanent Ulverston station was completed at the end of the year, a temporary wooden "High Level" station (on the site of the present Goods Yard and afterwards the Goods Shed) was used. It was blown down by a furious gale on 1st January, 1855.

Increased dividends of 6% for each half year were paid.

1855. Although the line from Crooklands to Lindal had only been opened in May, 1851, the iron-ore merchants were already pressing for a double line, and this was commenced in July, 1855. The work was not completed until May, 1857, owing to the necessity of doubling Lindal tunnel. The first length of the new lining collapsed on 5th October, 1855, killing one man and blocking the line which was out of service for ten days for goods traffic and over two months for passengers. The ore trade was not quite so prosperous during this year, but dividends of 6% were maintained.

1856. Barrow passenger station (Strand) was rebuilt of stone, instead of wood, and enlarged, and it was decided to rebuild part of the pier in masonry. There was a brief period of depression in the iron-ore industry and traffic during the first half of the year, but the Directors reported "very large traffic" at the August meeting —

[38] For some contemporary observations on this work see CW2, XLII, 139-144.

held at the Company's Offices at Barrow. Dividends — 1st half year 6%, 2nd half year 8%.

1857. A goods shed at Kirkby and a carriage shed at Barrow were reported complete in February, and further rolling stock was obtained — 400 Ulverston ore wagons (hired), several carriages, a "carriage truck" and a saloon carriage.

George Boulton had made a claim in 1854 against the Furness Railway in respect of his work on the Ulverston branch. This went to arbitration, and W. H. Barlow, the Arbitrator, gave his award in June, 1857.

Boulton had claimed	£45,319	8	10
The Furness Railway offered ..	£40,324	6	0
The Arbitrator awarded	£41,609	14	1

The claim included work done at Lightburn, Ulverston, as far as the canal bridge, which the Furness Railway had agreed to carry out for the Ulverston & Lancaster Railway Company.

The Coniston Railway Company was formed and obtained an Act of Parliament, while the opening of the Ulverston & Lancaster Railway completed railway communication between Lancaster and Whitehaven by the coast route. As trains had to shunt back at Furness Abbey station, however, to get on to the line for the run up to Broughton, valuable time was lost and in September the Directors decided on making what they termed "Expedition Curves" — one between Dalton and Park[39] and the other at Foxfield for a junction with the Whitehaven & Furness Junction line (N.B. The two railways joined at Broughton on an inverted "Y" and not "end on"; Gradon op. cit. 15). Throughout the year the dividend was maintained at 8%.

1858. The railway from Lindal to Ulverston (including

[39] Afterwards known as "Millwood Curve."

Pennington Cutting) had been formed for a double line. The section was doubled and, after inspection, opened, also a station at Foxfield.

Great depression in commerce generally affected all railway undertakings and the 1st half year's dividend fell to 7%, to be reduced to 6% for the 2nd half year.

In August, 1859, the Directors reported that unsettled affairs on the Continent had affected all trade; the dividend was raised to 7%, but fell to 6% again for the 2nd half year. It was increased to 7% for the 1st half year of 1860 and rose to 8% in the second half year, this figure being maintained until the second half year of 1863, when it was increased to 9%, followed by 10% for the 1st half year of 1864 — the highest point dividends ever reached.

FURNESS RAILWAY.

Some Comparative Figures, 1853-1860.

Traffic.

Year	Iron-ore. Tons.	General/ local Tons.	Slate. Tons.	Passengers.
1853	225,917	22,363		95,701
1854	332,673	40,731		145,261
1855	306,430	42,928	9,886	169,312
1856	445,013	43,961	10,602	183,843
1857	561,495*	62,128		188,200
1858	430,500			
1859	433,529			
1860	516,582			

* In consequence of the losses which the recent state of commercial affairs had caused to the Iron-ore Merchants, 3d. per ton "Drawback" was paid on iron-ore traffic for the second half year of 1857. (Half yearly meeting of the Furness Railway Company held on 24th February, 1858, and reported in the "Ulverston Advertiser" for 4th March).

N.B. Unfortunately, the papers and available newspaper files are incomplete and full figures for 1858-60 cannot be calculated from them.

THE ULVERSTON & LANCASTER RAILWAY.

The first Whitehaven & Furness Junction Railway Bill (1845), provided, as has already been mentioned, for a railway through Ulverston and Grange to Carnforth, after which nothing was done for several years.

Early in the 1840's John Brogden, Senior, and his three sons (John Jr., Alexander and Henry) had been engaged in railway contracts round Manchester, and later they became interested in Furness iron-ore mining. This caused them to become active in promoting a railway "oversands."

In spite of the previously noted opposition to a railway at Ulverston, some inhabitants were alive to the possibilities, and in 1849 and 1850 the columns of the "Ulverston Advertiser" contained many references to rumours of a line from that town to join the Lancaster & Carlisle Railway, as well as hopes of an early extension of the Furness Railway. These are too numerous to cite in detail but as an example we may quote a letter signed "Tyro" published in the issue of 27th September, 1849, which suggested an amalgamation of the Whitehaven & Furness Junction Railway and the Furness Railway, with an extension to Ulverston, to join a line to be made by a new company via Meathop to Milnthorpe, to meet the Lancaster and Carlisle Railway there. Another proposal was to take a railway via Chapel Island, where a station and hotel would be built.

Messrs. McClean and Stileman laid out and surveyed a line from Ulverston to Carnforth in 1850 and the Ulverston & Lancaster Railway Bill[40] was deposited in Parliament, receiving the Royal Assent on 24th July, 1851. Next day the bells of Ulverston Church were rung to celebrate the event, local opinion having at last realised

[40] In spite of the title, it was never contemplated that the railway would extend beyond the Lancaster & Carlisle Railway at Carnforth.

the advantages of through railway communication. The Company was incorporated at a meeting in London on 8th August, and the four Brogdens, with James Garstang, elected Directors, but, as in the early days of the Furness Railway, local financial support was poor and it was not until two years later, in September, 1853, that work was in full progress. Shortly after, on 6th November, John Brogden Jr. died suddenly at Ulverston, at the early age of 32 years.

Financial pressure caused McClean and Stileman to be replaced by James Brunlees as Engineer. Brunlees had recently carried out successful railway and reclamation works on Lough Foyle and his experience was thought likely to be of value in solving problems connected with the difficulties of crossing the Leven and Kent estuaries. These were eventually bridged by wooden viaducts, built by contractors, the first piles for the Leven Viaduct being planted on 1st April, 1856, and the work completed on 14th June, 1857. The Kent Viaduct was commenced on 21st October, 1856 and finished on 24th July, 1857. The remainder of the works were carried out by the Brogdens, and the single line railway was opened throughout for goods traffic on 10th August, 1857, passengers being conveyed from 26th August.[41] Although the Ulverston & Lancaster Railway owned some rolling stock, it never possessed any locomotives, hiring them from the Furness Railway, which thus, in effect worked the line and always had an interest in it. (Furness Railway Magazine, Vol. 1, No. 2, April, 1921. 28).

Brunlees introduced a special type of rail designed by himself, which appears to have been satisfactory,

[41] "Opening of the Ulverstone and Lancaster Railway. (Abridged from the *Morning Post*). The opening of this important link in the northern railway system took place on Wednesday week . . . " With two woodcuts: The Kent Viaduct. Dejeuner in Furness Abbey in celebration of the opening of the Ulverstone and Lancaster Railway. *Illustrated London News*, Vol. 31, 245-6. 5th Sept., 1857.

but was replaced by the standard Furness Railway permanent way between 1871 and 1873. On completing the line, he withdrew and McClean and Stileman were re-appointed as Engineers.

The Bill for the South Durham & Lancashire Union Railway (from Haggerleazes to Tebay), passed on 17th July, 1857, and the first sod was cut at Kirkby Stephen about five weeks later, on 25th August. Robert Hannay, of Ulverston, was a Director, and the construction of this railway, making it possible to obtain coke from Co. Durham, was the first step towards establishing blast furnaces at Hindpool, Barrow. As a result, Messrs. Schneider and Hannay erected three furnaces in 1859, which were in full blast by the end of that year. Three more furnaces were constructed in 1861. (Furness Railway Magazine, Vol. 2, No. 5, January 1922. 7; W. W. Tomlinson, op. cit., 561, 596).

This brought much traffic to the Ulverston & Lancaster Railway, its finances improved and the double line from Ulverston to Cark was commenced in 1862.

A proposal to purchase the railway was approved by the Furness Railway shareholders on 21st January, 1862, and the Ulverston Canal was bought for £22,000 at about the same time.[42] The actual purchase of the Ulverston & Lancaster Railway took place on 26th May, 1862, on a 6% basis.

[42] According to James Park: *Some Ulverston Records*, Atkinson, Ulverston, 1932, 23, towards the end of 1850 the Canal Company sold the undertaking to John Brogden, Jr., "acting for the Furness Railway Company." As the notice to shareholders is cited, wherein it was stated that the price was to be £18,000, such an arrangement seems to have been contemplated, but it does not appear to have been completed. The sale to the Furness Railway Company was authorised by an Act of 1862 and formally completed in 1867. The original documents inspected make it quite clear that the Furness Railway Company purchased direct from the Ulverston Canal Company, at the time, and for the price, stated above.

THE CONISTON RAILWAY.

In November, 1849, John Barraclough Fell proposed a narrow-gauge railway of 3 ft. 3 ins. from the Copper Mines at Coniston to link up with the Furness Railway at Broughton. Mr. J. R. McClean reported on this to the Earl of Burlington (afterwards Duke of Devonshire), the Chairman of the Furness Company and recommended a standard gauge (4 ft. 8½ ins.) line, estimated to cost £25,000, but no action was taken until 1856, when the project was revived, the Furness Directors speaking of a "Coniston branch." Messrs. McClean and Stileman laid out and surveyed the line. John Ramsden, who had been employed on the Lindal tunnel work from 1st November, 1855, at £80 per year, went to the Coniston line in August, 1856 and was responsible for most of the sectioning.

An Act was passed on 10th August, 1857 and the Coniston Railway Company formed. Although constituted as a separate concern, it was always closely associated with the Furness Railway, the Duke of Devonshire being Chairman and James Ramsden the General Manager and Secretary. Work was begun in January, 1858, by the contractors, Messrs. Child and Pickle of Bradford, who, however, got into financial difficulties in June and became bankrupt in August after being paid £5,145.

The Furness Railway Staff took over with W. S. Smyth in charge, assisted by John Ramsden, who was given a £20 increase of salary, but left for India early in 1859. Some of the work was carried out by Messrs. Gradwell and Grimley after they had completed their contract for the Dalton Junction to Park "Expedition Curve."

The new railway was inspected for the Board of Trade on 25th May, 1859, by Col. Yolland, R.E., whose requirements delayed the opening until 18th June, 1859.

The buildings at Coniston Station were not finished until the end of the year and the extension for mineral traffic to the copper mines wharf was not opened until 1860.

Locomotives were provided by the Furness Railway, who worked the line under a 5 years agreement, dated 17th June, 1859, and guaranteed the dividends. The Coniston Railway shareholders were to receive no payment in the first year, but during the second and third years a dividend at the rate of $\frac{1}{3}$, and during the fourth and fifth years at the rate of $\frac{1}{2}$ of the Furness dividend was to be paid. During the next five years the rate was to be $\frac{2}{3}$ of the Furness dividend and after ten years the dividends paid to the Coniston Railway shareholders were to be the same as those paid to Furness shareholders.

The Coniston Railway was absorbed by the Furness Railway in 1862. Although originally proposed for its value as a conveyor of mineral traffic[43] when the Coniston line came into existence, it was realised that its prosperity would partly depend on attracting some of the Lakeland visitors' traffic. To assist this, excursions on Coniston Lake were arranged. The first Coniston Lake steam Gondola was built of Low Moor Iron at Coniston Hall by Jones and Quiggan of Liverpool, from a design by Douglas Hobson of Liverpool, which included a locomotive boiler using coke fuel, similar to the Furness Railway engines.

The launch and trial runs took place in October, 1859 and a regular service commenced in June, 1860. The cost was £1,100. In the "Illustrated London News" (7th July, 1860) she is represented without a funnel, the exhaust being led out at the stern. By agreement this design was patented by the Furness Railway Company

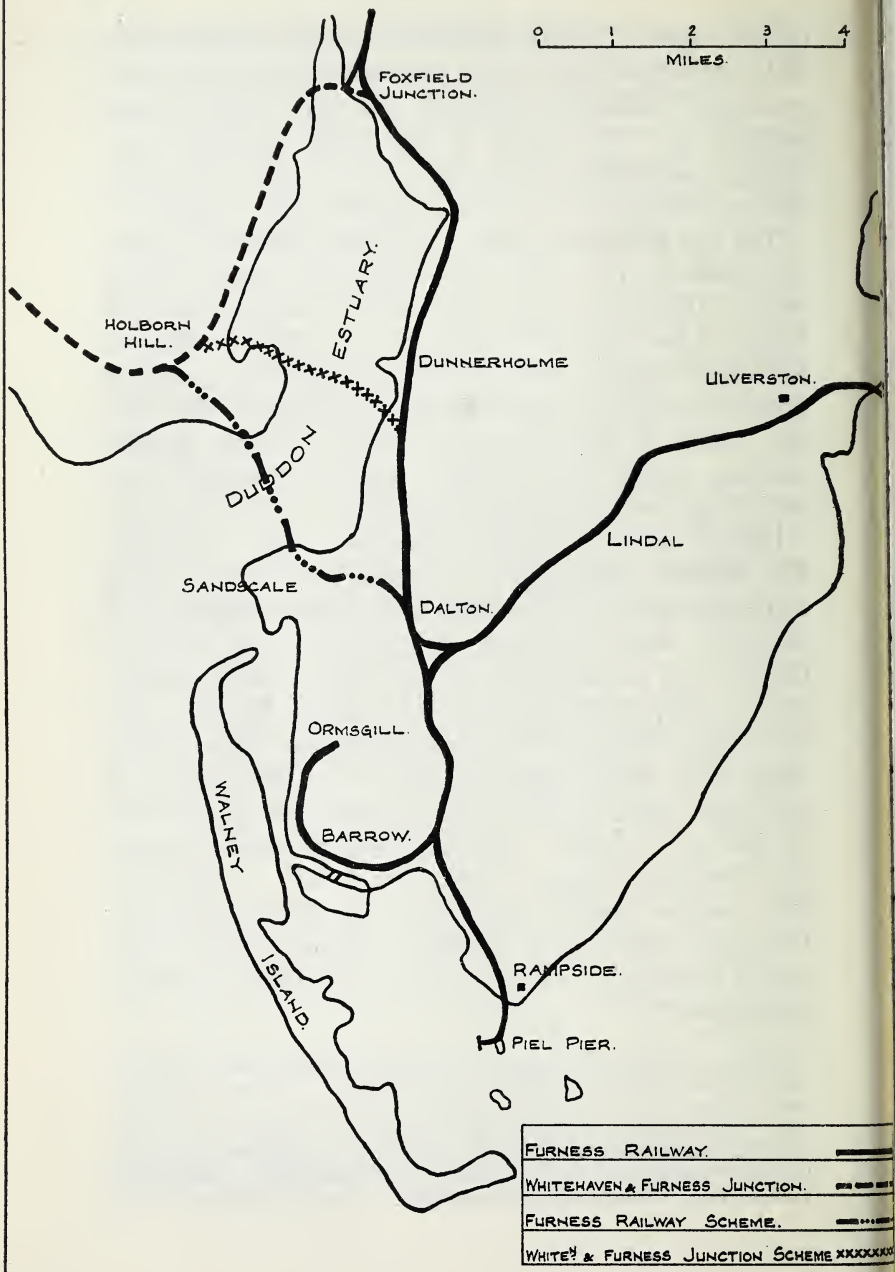
[43] Up to the making of the railway, the Coniston ore was conveyed down the lake in boats, then loaded into carts and carried to the point of shipment — usually Penny Bridge or Greenodd. (A. Fell: *The Early Iron Industry of Furness*, 1908, 313; *Furness Railway Magazine*, Vol. 1, No. 2, April 1921, 38).

in the name of James Ramsden. Some modifications were introduced later, but the vessel continued to sail until 1908, when her valuation was £40. She was then replaced by "The Lady of the Lake," but was later brought back into service, and ran until 1940. (Furness Railway Magazine, Vol. 1, No. 2, April 1921. 29-30).

The last important phase of Furness Railway History was between 1862 and 1865, momentous years during which, although it was not realised immediately, the future of the district was decided. In 1863 the Midland Railway Company, with the Furness Railway Company, promoted a Bill for a joint line from Carnforth to Wennington, where it would join the "Little" North Western Railway which the Midland Railway controlled and eventually purchased eight years later. (C. E. Stretton: "History of the Midland Railway, 1901. 149-150). The Midland Company also operated the boats sailing to Ireland and the Isle of Man from Poulton (Morecambe) Harbour, where the depth of water on each tide was limited, and an object of the new line as stated publicly was to enable through trains to be run to Piel Pier, and move the steamer services to that station, where sailing times were independant of tides. The line opened on 6th June, 1867, and the new services were inaugurated by the S.S. "Herald" which commenced to ply between Piel Pier and Douglas, I.O.M., on 1st July. The vessels then became jointly owned by the Midland Railway Company, the Furness Railway Company, and Messrs. James Little & Co., in equal shares, and managed by the last-named.[44]

[44] Known as Barrow's "Little Fleet" from this circumstance. The boats were: (*a*) to Belfast— "Talbot" and "Shelburne" (re-named "Armagh" and "Tyrone"), 250 tons, built in 1860 by Henderson & Co., of Renfrew; "Roe," 215 tons, 1864, and "Donegal," 306 tons, 1865, Caird & Co., Greenock. (*b*) to Isle of Man— "Herald," 252 tons, and "Londonderry," 394 tons, both new boats built in 1866 by Caird & Co. Later joined by "Manxman," 454 tons, 1870, P. Duncan & Co., Port Glasgow. All were iron paddle-steamers.

RAILWAY SCHEMES FOR CROSSING THE DUDDON. [1864 –



According to W. B. Kendall, however, the Directors of the Midland Company required the Carnforth-Wennington joint line for an additional reason of greater importance, but which could not be disclosed. So far as can be ascertained, the contemporary papers to which he alludes have long since ceased to exist but there seems to be no ground for doubting his statements, and the later history of the Furness Railway and Barrow Docks can be most satisfactorily explained by accepting his interpretation of events at this time.

Although the Midland Railway had, in effect, reached the Lancashire coast, the company had no through line to Scotland, their communication being dependant upon the York & North Midland, the York, Newcastle & Berwick, and the North British Railways until the completion of the "Little" North Western on 1st June, 1850 made it possible for the Midland to work their Scottish traffic through to Lancaster (Castle) and there forward it by by the Lancaster & Carlisle Railway. In October, 1861, the London & North Western Railway (which had obtained control of the Lancaster & Carlisle in 1859 by means of a 900-years lease) opened a branch from Low Gill to Ingleton where it made an "end on" junction with the "Little" North Western. This provided a better route for the Midland Scottish traffic although it had to be handed over to a keen rival at Ingleton, to be worked via Low Gill, Shap and Carlisle. In 1862 the London & North Western offered such a poor connecting service by this route, with so many delays and inconveniences that the Midland traffic was practically killed and the Midland Directors, naturally desiring to terminate an unsatisfactory arrangement and obtain the full revenue of traffic originating on their system, commenced to consider the possibility of reaching Scotland by their own line.[45]

[45] For a full account see Stretton, op. cit. 148 and 209; also Fk. W. Houghton and W. Hubert Foster: *The Story of the Settle-Carlisle Line*, 1948, 15-16.

The only route from Midland territory was through Settle and Appleby to Carlisle, over which it would be extremely difficult and expensive to build a railway. As an alternative, a coast route rather similar to that proposed by George Stephenson in 1837 must have appeared attractive, expecially as the Furness, Whitehaven & Furness Junction, and Whitehaven Junction Railways provided an existing track from Carnforth to Maryport, beyond which place the Carlisle & Maryport Railway might be utilised, or better (to avoid complications with other companies by entering Carlisle), a new railway could be built into Scotland, as a way across the Solway was still open.[46] A more direct crossing of the Duddon estuary might be desirable eventually, but the first essential was to reach the Furness Railway at Carnforth—hence the joint line from Wennington.

In September, 1864, the Directors of the Whitehaven & Furness Junction Railway deposited a Bill for the Duddon crossing to Dunnerholme, powers for which were included in their Act of 1845 but had lapsed. Some overtures appear to have been made to the Furness Company to join the project and make a joint scheme,[47] which ought to have been accepted, for a loop line via Roanhead, Barrow and Aldingham to a junction at Plumpton would have made possible a level route all the way into Scotland, and consequently the local

[46] It may be significant that the Solway Junction Railway was incorporated in 1864 to build a line from the Caledonian Railway at Kirtlebridge to the Maryport & Carlisle Railway at Brayton, crossing Solway Firth by a viaduct near Bowness, and in 1866 promoted a Bill for an extension to Maryport where it would join the Whitehaven Junction Railway. The Bill was abandoned when the Maryport & Carlisle granted running powers and through facilities to Maryport. (J. Simmons, op. cit. 18).

[47] These facts may also be regarded as support for Mr. Kendall's contentions. The direct Duddon crossing was unnecessary for purely local railways as it could attract no additional traffic to provide increased revenue to justify the capital expenditure. But considered as a link in a trunk line to Scotland, carrying express trains, its importance becomes evident.

railway would have been indispensible to the Midland Company and worth almost any value the former cared to ask. Unfortunately, the Furness Directors refused to consider the plan — whether through lack of foresight, resentment at the proposal of the Cumberland railway to cross into Furness or other reasons has never been made clear — and themselves deposited a Bill in November, 1864, for a Duddon crossing from Sandscale Haws to Hodbarrow. Gradon (op. cit.) suggests they hoped to obtain the traffic from the Hodbarrow Mines and the new Ironworks at Millom, and it is difficult to find any other adequate reason for their action, but however that may be, the threat of invasion into Cumberland was a far more serious one to the Whitehaven & Furness Junction Company than the entry at Dunnerholme could have been to the Furness Railway and the former had some justification for the bitter indignation they expressed.

Both Bills were considered by a Commons Committee, who rejected the Furness proposals, and reported in favour of the Whitehaven & Furness Junction scheme, which was passed. It must be doubted, however, if either Company was strong enough alone to have raised the capital necessary for such a costly undertaking as the Duddon crossing, for although the Whitehaven & Furness Company in particular, appeared prosperous, they had heavy revenue charges on timber viaducts to meet and shortly would have been faced with expenditure on relaying their track. Nevertheless, having obtained their Act to cross into Furness, they next proposed a direct opposition line from Ireleth to Lindal, presumbably intended to enable them to compete in the iron-ore carrying traffic, taking the material to Whitehaven for shipment to the detriment of the Furness Company's port at Barrow.

On 1st May, 1865, the Furness Railway engineers, who

had been ordered to investigate these proposals of the Whitehaven & Furness Junction Railway, reported that they considered them practicable. Three possible schemes were reviewed:—

	A.	B.	C.
Estimated cost..	£180,000	£140,000	£100,000
Saving in mileage on existing Furness Railway line ..	4¼ m.	3 m.	1 m. 33 ch.
Gradients ..	1 in 80	1 in 90	1 in 90
Tunnels in length	2¼ m.	2 m.	none

Conjecture has been made as to whether the proposed new line was a "bluff" designed to force the Furness Company into some form of co-operation; if so, it was successful, for the Furness board, much alarmed, bid for the Whitehaven & Furness Junction Railway, and bought it a few months later on an 8% basis, which Mr. Kendall — no doubt quoting opinion of the time — states was "a preposterous price, having regard to all the circumstances." The Furness Directors were advised that (with a possible line to Scotland in view) the Whitehaven & Furness Junction Railway was useless without the Whitehaven Junction Railway and that on no account should they purchase the one without the other. Yet when the latter offered to sell on a 10% basis, the offer was rejected.

The London & North Western Railway Company, which had viewed the negotiations with concern, naturally, at once stepped in and bought the Whitehaven Junction line, reaching it via the Cockermouth, Keswick & Penrith Railway (which they worked and controlled with the

North Eastern Railway), and the Cockermouth & Workington Railway.[48] The Furness Railway had made a fatal mistake, for in Mr. Kendall's homely but expressive phrase, the London & North Western Railway "had it in the nut-crackers," controlling, as it did now, both ends of the Furness system. This may be regarded as the final phase of earlier railway history in Furness. A railway in such a position was useless to the Midland Company; any hidden scheme of their Directors for a coast route to Scotland had to be abandoned and policy modified. A Bill for a line from Settle to Carlisle was deposited in November, 1865, and an Act obtained. After an attempt to let the scheme lapse, and other delays, construction was commenced in 1869, the line completed for goods traffic on 2nd August, 1875, and passed for passenger traffic on 1st May, 1876. (Stretton, op. cit. 209 *et. seq*; Houghton and Foster, op. cit.).

For a time the Furness Railway continued a little local expansion. In 1867 work commenced on the Plumpton Junction to Newby Bridge branch[49] which it was agreed, in 1868, to extend to the port of Lake Windermere at Lakeside (opened on 1st June, 1869), in which year also a mineral branch was opened from Crooklands to Stainton to bring down limestone for the Hindpool furnaces. (Furness Railway Magazine, Vol. 1, No. 2, April 1921. 39). Two other short branches for mineral traffic were opened in 1873 — from Salthouse Junction to Stank, and a continuation from Barrow old station (Strand) to Ormsgill, where it later joined the Barrow Central loop. New ironworks were established

[48] J. Simmons, op. cit., 20-21; *Furness Railway Magazine*, Vol. 1, No. 1, January 1921, 4; W. McGowan Gradon: *A History of the Cockermouth, Keswick and Penrith Railway*, 1948, 1-2.

[49] "Furness Railway — The first sod of the Newby Bridge Branch was cut on 12th Nov., 1866, at Haverthwaite by James Ramsden. Line to be opened in March, 1868." *North Lonsdale Magazine*, Vol. 1, No. 7 (January, 1867), 275.

near Ulverston in 1874 by the North Lonsdale Company, and a branch was constructed to these works, which it was intended to extend to Bardsea, and possibly to Barrow (ibid). The formation was completed to Red Lane, near Bardsea, but the track was never continued beyond Conishead Priory station.

In July, 1865 an Act was passed incorporating "The Furness and Lancaster & Carlisle Union Railway Company" to construct a line (afterwards known as the "Arnside branch") from the Furness Railway at Arnside to the London & North Western Railway main line at Hincaster. The work was not commenced, the company, which had been sponsored by the Furness Railway Company, being dissolved by a further Act two years later and its powers conferred upon the latter, who were required to complete the line within five years. The project appears to have been promoted originally at the instance of the London & North Western Company to block possible competitors (in particular from the north-east), and by this time the Furness Railway, now dependant upon the goodwill of the great company, can have had no option in the matter though obviously the Directors were not enthusiastic as an extension of the time limit was successfully applied for twice. Eventually the single line branch was commenced in July, 1874, and opened on 26th June, 1876. At first the London & North Western permitted no through traffic, but later the Furness Railway obtained running powers to give access to Kendal. (ibid).

A Barrow loop-line had been commenced in November, 1870, the contractor being James C. Hunter (son of Thomas Coulton Hunter), but little work was done for several years. It was continued through Sowerby Wood to join the old line at Thwaite Flat, and completed as a double line in 1882, with a new station at Barrow

(Central), after which all passenger trains between Whitehaven and Carnforth used this line. Here railway expansion in Furness practically ceased.

Northwards, the acquisition of the Whitehaven & Furness Junction Railway made certain staff changes possible. In 1865, James Ramsden was promoted to the position of Managing Director and next year was relieved of his Secretarial duties, Henry Cook, Secretary of the Whitehaven & Furness Junction Railway, becoming Secretary and Traffic Manager of the enlarged Furness Railway. (Ibid, Vol. 2, No. 5, January 1922. 7.).

The liabilities taken over with the Cumberland line caused immediate heavy expenditure. The permanent way needed relaying with steel rails in place of iron, which were becoming unserviceable; the timber viaducts at Foxfield, Eskmeals, Ravenglass, Drigg and Calder required renewing and the various stations' buildings had to be rebuilt in stone,[50] but above all, there was the obligation to bridge the Duddon. Esk viaduct was dealt with first; the stone piers were erected during the winter of 1866-67 and the wrought-iron superstructure was completed by the end of the year. Drigg and Ravenglass viaducts were similarly constructed and completed in June, 1868, under the supervision of Charles Timmins as Resident Engineer, at an annual salary of £100. The total cost of the three viaducts was £23,572.

During 1867 the contract for the Duddon crossing was let and cast-iron work for the viaduct assembled near Dunnerholme, but in the following year the heavy financial strain being faced for renewals elsewhere forced the Furness Board to re-consider the matter[51] and as a

[50] The usual Whitehaven & Furness Junction station had comprised a small wooden office, 10 ft. × 10 ft., and an open-fronted shelter, 12 ft. × 8 ft., this being the only accommodation provided for passengers.

[51] They may, by then, also have realised that their system would never become part of a trunk line, and that the Duddon crossing was therefore no longer necessary.

result the scheme was once more abandoned. (Gradon, op. cit., 27).

The material was afterwards used, curiously enough, for its original purpose of bridging the Duddon, but in a very different sense. When the wooden viaduct at Foxfield was rebuilt, the work was let to John Gibson (November, 1871), who used the cast-iron work, lying at Ireleth, in the columns, stanchions, cross-heads and longitudinal girders of the new bridge. Gibson used more of this spare material in reconstructing the wooden viaducts at Kirkby Pool (commenced 11th May, 1872) and over the Calder at Sellafield (commenced in August, 1872). Foxfield and Kirkby viaducts were completed before the end of 1872,[52] but Calder viaduct was not ready until a year later.

With James C. Hunter as contractor, and John Thomson as Resident Engineer, the track was doubled from Ireleth (Askam) to Sellafield, commencing in May, 1871, the sections being completed as follows:—

Seascale to Bootle	..	April, 1872
Ireleth to Foxfield	..	December, 1872
Foxfield to Millom	..	March, 1873
Millom to Bootle	..	December, 1873
Seascale to Sellafield	..	July, 1874

The main line of the Furness Railway was then a double one throughout from Carnforth to Sellafield. As has been said already, considerable renewals to existing track had to be made in addition, so that, after taking over the Whitehaven & Furness Junction Railway, the Furness Company practically had to rebuild it.

[52] *Furness Railway Magazine*, Vol. 1, No. 1, January 1921, 8.

BARROW HARBOUR AND DOCKS.

Although not strictly railway history, our final note should refer briefly to Barrow Harbour and Docks, as they are so closely connected with it in Furness.

The first Barrow Harbour Act was obtained in 1848 and vested the harbour in Perpetual Commissioners, who were authorised to borrow, and the Furness Railway Company to lend, £5,000. The Chairman of the Company (*pro tem.*) was always a Commissioner. Thus, the Railway was keenly interested in the Harbour's progress and very naturally so, as it depended for its prosperity chiefly on the mineral traffic it obtained for shipment, and at various times the Directors increased the wharfing space at their Barrow terminus to improve the loading facilities and provide berths for larger vessels. Although only a "creek" under Lancaster, until 1st November, 1872, Barrow Harbour dealt with a considerable trade, as the following figures indicate:—

Year.	Vessels entering.	Ballast discharged.	Total Cargo.	Of which Iron-ore amounted to.
1848	1413	10,180 tons	120,000 tons	100,000 tons
1849	1911	23,280 tons	160,000 tons	150,000 tons*

* Includes some supplies (coal, timber, etc.) for the mines.

A further Act, passed on 23rd July, 1855, gave the Harbour Commissioners wider powers and authorised them to borrow an additional £30,000 from the Furness Railway. As a result of extensive dredging in Barrow Channel,[53] it was reported, on 27th August, 1857, that vessels of 500 tons could leave the steam-boat wharf at

[53] The work was carried out under the supervision of W. S. Smyth, as Resident Engineer, at a salary of £150 per annum. He went to the Coniston Railway in August, 1857, when the Company was formed.

neap tides, two feet extra depth of water having been obtained since 1853. (Furness Railway Directors' Report).

During the years when railway activities were determining whether the Furness Railway Company and the associated railways to the north and south of it might become part of a main coast route to Scotland, or remain local lines of limited importance, the former were also engaged in considering and projecting docks at Barrow.

The "Barrow Float and Tidal Basin" scheme was proposed in 1861, and on 15th October of that year the Furness Railway Engineers reported favourably upon it to their Directors. A Bill was deposited in 1862 and the Act passed on 22nd June, 1863. This empowered the Railway to construct docks (Devonshire, Buccleuch and a Timber Float), repealed the Barrow Harbour Acts of 1848 and 1855, and vested the Harbour in the Furness Railway Company, who were to raise capital of £137,000 (£120,000 for construction of the docks and £17,000 to pay off loans made by the Duke of Devonshire and Duke of Buccleuch to the Harbour Commissioners).

A branch line to Hawcoat Quarry to bring stone to the dock works was laid in 1863-64 by J. R. Allen at a cost of £6,920 6s. 4d., and in 1864 the Docks contract was let to Messrs. Brassey & Field. Devonshire Dock was constructed first and was completed in a little over three years, being opened for traffic on 24th August, 1867. The first vessel to enter was the schooner "W. & M. J." towed by the steam launch "Dione."

Since the commencement of the railway in 1846, the village of Barrow had grown with its progress and prosperity and in 21 years had reached the status of a town sufficiently large to apply for incorporation, which was granted on 13th June, 1867. The summer was, therefore, one of great rejoicing, concluding with the

official opening of Devonshire Dock,[54] on 19th September, 1867. A distinguished party inspected the harbour, sailing in the S.S. "Herald" and at the banquet which followed, optimistic speeches were made concerning the future of the town and docks. The Rt. Hon. W. E. Gladstone, the principal guest, remarked in his speech that "some day Barrow will become a Liverpool. Let it become a Liverpool if it will and can, the old Liverpool will be none the worse, but better for it." (Barrow Herald, 21st September, 1867).

Some years were to elapse before it was discovered, as history has shown, that the unfortunate decision of the Furness Railway Board in allowing their system to be blocked at both ends by a great rival, (thereby giving up hope of through traffic, except as permitted by that rival) meant also that a great dock scheme had been doomed before the original plans were well past the paper stage. At the time Devonshire Dock was opened, the "Barrow Herald" said "The Buccleuch Dock . . . is not expected to be completed until the next Spring," but there appears to have been delay in opening, for reasons we have been unable to trace, though possibly it was due to the original contractors, Brassey & Field, only carrying out part of the work, which was completed by another contractor, William Hanson, who continued excavating in March, 1871. Buccleuch Dock was inaugurated, again by the "Dione," on 14th February, 1873.

The times remained prosperous, and still optimistic, further dock schemes were considered by the railway Directors. The original entrance from Walney Channel was by a lock into Devonshire Dock. It was now proposed

[54] For full account see Gradon, op. cit., Chapter V, also the *Barrow Herald* (21st Sept., 1867) and the *Illustrated Times* (28th Sept., 1867). The often repeated statement that the ceremony was performed by the Rt. Hon. W. E. Gladstone may not be correct. The *Barrow Herald* does not make the matter clear, but the *Illustrated Times* says definitely that the Dock was opened by the Duke of Devonshire.

to construct two new docks (Ramsden and Cavendish) with a larger and more convenient entrance lock to the former, lower down the channel.

The Act for this new work was passed in 1872, and Hanson was again successful in obtaining the contract, but, after he had carried out work valued at £25,356, the designs were altered: he was compensated and the scheme was completed departmentally.[55]

The entrance basin was flooded in April, 1878, and Ramsden Dock inaugurated by the S.S. "Ariadne," on 24th March, 1879. Cavendish Dock never came into use, merely acting as a "feeder" to the other docks and was eventually leased to Vickers Ltd., for experimental work.

In the early 1870's a 10% dividend was maintained by the Furness Railway and while the Furness iron-ore trade flourished, the railway and docks prospered. But by the end of the decade, matters were less promising, and the money spent on improving Walney Channel and the Docks seemed unjustified. The first signs were becoming apparent that Furness ore was not inexhaustible[56] and it was clear that Barrow would never become a great port for general commerce.

Shareholders began to complain about the huge expenditure in 1883 (Gradon, op. cit., 39 *et seq.*), but the Directors continued to get their own way, and perhaps this was for the best. The Barrow-in-Furness Shipbuilding Company (later Naval Construction & Armaments Co. Ltd., and finally Vickers-Armstrongs Ltd.) was established on Old Barrow Island, in 1873, launching their vessels into Walney Channel and fitting-out in the docks,

[55] As a matter of interest, it may be mentioned that Mr. W. B. Kendall was himself largely occupied with the dock work at this time and until 1879.

[56] Though the day was still distant when Barrow would begin to import the raw material, on the export and manufacture of which it grew from a tiny hamlet to a County Borough.

eventually the most important use to which they were put. As ships increased in size, it was essential to deepen the channel and keep it dredged. Had this not been done — enormous though the cost — even this use would have been impossible, but the fact remains that Barrow Docks never have been, and probably never will be, employed to their full capacity.

As events have shown, the Furness Railway Directors' lack of foresight in 1865 led to mistaken decisions which were to make the later history of the railway, the docks and, to some extent perhaps, the town of Barrow itself, a rather melancholy record of "what might have been."

APPENDIX.

ACTS OF PARLIAMENT.

Our member Mr. Wilson Butler informed us that bound copies of the various Acts relating to the Furness Railway were preserved at the Ulverston Urban District Council Offices, and these have been inspected by courtesy of the Council. Volume One (1793-1867) contains the following:

33 Geo. 3, cap. cv.
An Act for making and maintaining a Navigable Cut or Canal from a Place called Hammerside Hill in the Parish of Ulverstone, in the County Palatine of Lancaster, to a Place called Weint End, near the Town of Ulverstone aforesaid. (8th May 1793).

6 & 7 Victoria cap. xlii.
An Act for erecting and maintaining a Pier in Pile Harbour in the Parish of Dalton-in-Furness in the County Palatine of Lancaster. (27th June 1843).

7 Victoria cap. xxii.
An Act for making a Railway from Rampside and Barrow to Dalton, Lindale, and Kirkby Ireleth, in the County Palatine of Lancaster, to be called "The Furness Railway." (23rd May 1844).

8 & 9 Victoria cap. c.
An Act for making a Railway from Whitehaven in the County of Cumberland, to a Point of Junction with the Furness Railway in the Parish of Dalton in the County Palatine of Lancaster, to be called "The Whitehaven and Furness Junction Railway." (21st July 1845).

9 & 10 Victoria cap. cclxxix.
An Act to enable the Furness Railway Company to extend their Line to Broughton and to Ulverstone, and to make certain Branches therefrom; and to amend the Act relating thereto. (27th July 1846).

9 & 10 VICTORIA CAP. CCCXX.
An Act to enable the Whitehaven and Furness Junction Railway Company to make a Railway in Deviation from their Line of Railway, and to construct an Extension thereof to a Point of Junction with the Whitehaven Junction Railway. (3rd August 1846).

9 & 10 VICTORIA CAP. CCCLXXXVI.
An Act for reclaiming from the Sea, embanking, and improving the Salthouse Sands in the Manor of Plain Furness in the County Palatine of Lancaster. (18th August 1846).

10 VICTORIA CAP. VI.
An Act for extending and enlarging a certain Pier in Pile Harbour in the Parish of Dalton-in-Furness, in the County Palatine of Lancaster, and to alter the Act relating thereto. (11th May 1847).

11 & 12 VICTORIA CAP. XXXV.
An Act for maintaining, regulating, and improving the Harbour of Barrow in the County Palatine of Lancaster. (30th June 1848).

11 & 12 VICTORIA CAP. CXXVI.
An Act to enable the Furness Railway Company to raise a further Sum of Money, and to purchase steam vessels; and for the Amendment of the Acts relating to the said Company. (14th August 1848).

11 & 12 VICTORIA CAP. CXXVIII.
An Act to enable the Whitehaven and Furness Junction Railway Company to deviate or extend their Line of Railway from Silecroft to Foxfield, and to abandon a Portion of their Line between Silecroft and Ireleth, to make Branches to Whitehaven Harbour, and for other Purposes. (14th August 1848).

14 & 15 VICTORIA CAP. CII.
An Act for making a Railway from the Furness Railway at Ulverstone to the Lancaster and Carlisle Railway at Carnforth, to be called "The Ulverstone and Lancaster Railway." (24th July 1851).

16 & 17 VICTORIA CAP. CL.
An Act for confirming a certain Agreement entered into between the Furness Railway Company and John Abel Smith

Esquire, and for enabling the Furness Railway Company to raise a further Sum of Money, and for authorizing the Conversion of the borrowed and preferential Share Capital of the Furness Railway Company into a Stock not exceeding Four Pounds Ten Shillings per Centum, and for amending the Acts relating to the said Company and Pile Pier. (4th August 1853).

16 & 17 VICTORIA CAP. CLXXI.
An Act to enable the Whitehaven and Furness Junction Railway Company to make Branch Railways; and for other Purposes. (4th August 1853).

17 VICTORIA CAP. LXIV.
An Act for making a Railway from the Whitehaven and Furness Junction Railway, near Whitehaven, to Egremont, in the County of Cumberland, with a Branch therefrom to Frizington in the same County, to be called the Whitehaven, Cleator, and Egremont Railway; and for other Purposes. (16th June 1854.)

17 & 18 VICTORIA CAP. LXXVI.
An Act to enable the Furness Railway Company to raise a further Sum of Money, and for the Amendment of the Acts relating to the said Company. (3rd July 1854).

18 & 19 VICTORIA CAP. CLXXIII.
An Act to repeal and consolidate the several Acts relating to the Furness Railway Company; to enable the said Company to raise a further Sum of Money; to give further Powers to the said Company; and for other Purposes. (23rd July 1855).

18 & 19 VICTORIA CAP. CLXX.
An Act for extending the Limits of the Harbour of Barrow in the County Palatine of Lancaster; and to enable the Commissioners of the said Harbour to raise a further Sum of Money; and for other Purposes. (23rd July 1855).

20 & 21 VICTORIA CAP. CX.
An Act for making a Railway from Broughton to Coniston in the County Palatine of Lancaster; and for other Purposes. (10th August 1857).

20 & 21 VICTORIA CAP. CXXII.
An Act to enable the Whitehaven and Furness Junction Railway Company to raise additional Capital; and for other Purposes. (10th August 1857).

21 & 22 VICTORIA CAP. XCVIII.

An Act for authorizing the raising by the Ulverstone and Lancaster Railway Company of further Money, and the selling or leasing of their Railway to the Furness Railway Company; or the making by the Two Companies of Working Arrangements; and for giving further Powers to the Two Companies respectively; and for other Purposes. (12th July 1858).

24 VICTORIA CAP. LXII.

An Act to enable the Whitehaven, Cleator, and Egremont Railway Company to extend their Railway from Frizington to Lamplugh in the County of Cumberland, to widen and enlarge their present Railway and Works, to raise further Capital; and for other Purposes. (7th June 1861).

25 & 26 VICTORIA CAP. LXXXIX.

An Act to enable the Furness Railway Company to make a Branch Railway to Hawcoat Quarry; to vest in the said Company the Undertaking of the Ulverstone Canal Navigation; and to enable them to raise additional Capital; and for other Purposes. (30th June 1862).

25 & 26 VICTORIA CAP. CXXXIII.

An Act to authorize the Amalgamation of the Coniston Railway Company with the Furness Railway Company, and for other Purposes. (7th July 1862).

26 VICTORIA CAP. LXIV.

An Act to enable the Whitehaven, Cleator, and Egremont Railway Company to extend their Railway from Lamplugh, to join the Cockermouth and Workington Railway, in the County of Cumberland; to divert and alter a Portion of the Frizington Branch Railway at Cleator Moor; to raise further Capital; and for other Purposes. (18th June 1863).

26 & 27 VICTORIA CAP. LXXXIX.

An Act for vesting the Harbour of Barrow in the County Palatine of Lancaster in the Furness Railway Company; for enabling the said Company to construct a Dock and other Works at Barrow, and to raise Capital; and for other Purposes. (22nd June 1863).

26 & 27 VICTORIA CAP. LXXXII.

An Act to empower the Furness Railway Company and the Midland Railway Company to construct a Railway to be

called "The Furness and Midland Railway," and for other Purposes. (22nd June 1863).

28 VICTORIA CAP. LXXXVI.
An Act to enable the Whitehaven, Cleator, and Egremont Railway Company to make Branches and other Works, and to extend their Railway to Bigrigg Moor in the County of Cumberland; and to raise further Capital; and for other Purposes. (19th June 1865).

28 & 29 VICTORIA CAP. CLXXIX.
An Act to enable the Furness Railway Company to construct new Lines of Railway, and to raise further Monies; and for other Purposes. (29th June 1865).

28 & 29 VICTORIA CAP. CXLIII.
An Act to enable the Whitehaven and Furness Junction Railway Company to make Branches and other Works, and to extend their Railway from Millom in the County of Cumberland to join the Furness Railway in the Parish of Dalton in the County of Lancaster; to raise further Capital; and for other Purposes. (29th June 1865).

28 & 29 VICTORIA CAP. CCCXXIX.
An Act for incorporating a Company for making a Railway to be called "The Furness and Lancaster and Carlisle Union Railway"; and for other Purposes. (5th July 1865).

29 & 30 VICTORIA CAP. CXXXII.
An Act to empower the Whitehaven and Furness Junction Railway Company, and the Whitehaven, Cleator, and Egremont Railway Company, to make a Railway from Egremont to Sellafield in the County of Cumberland, to raise further Capital; and for other Purposes. (28th June 1866).

29 & 30 VICTORIA CAP. CLXXVI.
An Act for conferring additional Powers on the Furness Railway Company for the construction of Works, and otherwise in relation to their Undertaking; and for other Purposes. (16th July 1866).

29 & 30 VICTORIA CAP. CCXXXVI.
An Act for the Amalgamation of the Whitehaven and Furness Junction Railway Company with the Furness Railway Company; and for other Purposes. (16th July 1866).

30 & 31 VICTORIA CAP. CIV.

An Act for conferring further Powers upon the Furness Railway Company for the Construction of Works and the Acquisition of Lands, and otherwise in relation to their Undertaking; to provide for the Abandonment of the Railway authorized by "The Furness and Lancaster and Carlisle Union Railway Act, 1865" and the Dissolution of the Furness and Lancaster and Carlisle Union Railway Company; and for other Purposes. (20th June 1867).

Volume Two (1869-1892) consists principally of Acts relating to matters beyond the scope of this paper, but includes the following:

32 & 33 VICTORIA CAP. CLIV.

An Act for conferring further Powers upon the Furness Railway Company for the construction of Works and the acquisition of Lands, and otherwise in relation to their Undertaking and for other Purposes. (9th August 1869).

35 & 36 VICTORIA CAP. LXXXIII.

An Act for authorising the Furness Railway Company to provide and use Steam and other Vessels on Windermere Lake and Coniston Lake; and for other Purposes. (18th July 1872).

NOTE: The Act of 16th July 1866 (29 & 30 VICT. CAP. CLXXVI) authorised the company to hold a controlling share in the Windermere United Steam Yacht Company, Ltd., and this Act authorised the Furness Railway Company to buy out the undertaking.

35 & 36 VICTORIA CAP. XCIX.

An Act for conferring additional powers upon the Furness Railway Company for the Construction of Works and the raising of Money, and otherwise in relation to their Undertaking; and for other purposes. (18th July 1872).

NOTE: This Act extended the time for the completion of the Arnside branch to 20th June 1875).

36 VICTORIA CAP. XLVIII.

An Act for making a Railway in the county of Cumberland, to be called "The Ravenglass and Eskdale Railway"; and for other purposes. (26th May 1873).

39 & 40 VICTORIA CAP. XLVII.

An Act for conferring further Powers on the Furness Railway Company for the Construction of Works, the Acquisition of Lands, the Raising of Money, and otherwise in relation to their Undertaking; and for other purposes. (27th June 1876).

NOTE: This Act further extended the time for the completion of the Arnside branch to 1st August 1876.

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